ATTACHMENT 1-1

UNIQUE SPECIAL PROVISION

CRITICAL PATH METHOD SCHEDULE

The Standard Specifications are revised as follows:
SECTION 108, AFTER LINE 171, INSERT AS FOLLOWS:

108.04.1 Critical Path Method Schedule

(a) General Requirements

The Design-Build Contractor shall provide a project schedule using the critical path method, CPM, in place of the bar graph type schedule required in accordance with 108.04. In addition to the Submittals required herein, the CPM schedule shall be used to develop all schedules provided by the Design-Build Contractor at scheduling meetings held in accordance with 108.04.

The CPM schedule shall show the various activities of work in sufficient detail to demonstrate a reasonable and workable plan to complete the work in the specified contract time.

The Design-Build Contractor shall be responsible for ensuring that all work sequences are logical and that the schedule reflects a coordinated plan. The CPM schedule shall indicate the order and interdependence of activities and the sequence for accomplishing the work.

The CPM schedule shall include sufficient detail to allow IFA to readily identify the work and evaluate the progress of each activity. The CPM schedule shall include activities for all work to be performed by the Design-Build Contractor and Subcontractors. The schedule shall also include activities specific to the project to be performed by IFA, other units of government, regulatory agencies, Utilities and any other parties necessary to complete the Work. The schedule shall reflect the scope of work, construction phasing, maintenance of traffic requirements, environmental requirements, utility and railroad coordination, coordination with other contractors, and any other work included in the contract. The schedule shall include activities for working and shop drawing preparation, Design-Build Contractor Submittals, Submittal review time by IFA, material procurement and fabrication, and the delivery of materials, plant, and equipment and other similar activities.

Failure by the Design-Build Contractor to include any element of Work or to accurately reflect the relationships among the work activities required for performance of the contract does not excuse the Design-Build Contractor from completing all required work within the specified time.

(b) Definitions

The following definitions shall be applied to the terms used in this specification and shall not be taken to modify in any way the definitions in 101.02 through 101.74.

***Activity** – A discrete, identifiable task or operation that takes time, has a definable start and stop date, furthers the work's progress, and can be used to plan, schedule, and monitor a project.*

***Activity Calendar** – A set of days assigned to a specific activity on which work for the activity may be scheduled.*

Activity Calendar Day *– A day on which work is scheduled to be performed on a specific activity.*

Activity Identification (ID) Number *– A unique, alphanumeric identification code assigned to a specific activity.*

Activity Network Diagram *– A graphic representation of a CPM schedule, including a timescale, which shows the relationships among activities.*

Bar Chart *– A graphic representation of a schedule without relationship lines displayed. A timescale appears along the horizontal axis.*

Calendar ID *– An alphanumeric identification code assigned to an activity calendar.*

Closure Period *– The original or revised maximum duration specified in the contract for the closure of a road, ramp, bridge, or other facility.*

Constraint *– A restriction imposed on the start or finish dates of an activity that modifies or overrides the activity's logic relationships.*

Controlling Activity *– The first incomplete activity on the Critical Path.*

Critical Activity *– Any activity on the critical path.*

Critical Path *– Has the meaning set forth in Exhibit 1 of the PPA.*

Data Date *– The first day in a Project Baseline Schedule or the first day for performance of the remaining work in a Project Status Schedule. For a Final Schedule, it is the date that the last activity was completed.*

Delayed Start Date *– The original or revised date specified in the contract prior to which work on the project is prohibited.*

Final Schedule *– The last CPM schedule containing actual start and finish dates for every activity.*

Free Float *– The amount of time an activity can be delayed and not delay a successor.*

Milestone *– An activity with no duration that is typically used to represent the beginning or end of the project or an interim phase.*

Project Status Schedule *– A CPM schedule produced by incorporating the project's actual progress into the last accepted Submittal.*

Open End *– The condition that exists when an activity has either no predecessor or no successor, or when an activity's only predecessor relationship is a finish-to-finish or only successor relationship is a start-to-start.*

Original Duration *– The estimated time, expressed in activity calendar days, required to perform an activity.*

Predecessor *– An activity that is defined by schedule logic to precede another activity. A predecessor may control the start or finish date of its successor.*

Project Baseline Schedule *– An accepted CPM schedule showing the original plan to complete the entire project.*

Relationship *– The interdependence among activities. Relationships link an activity to predecessors and successors.*

Remaining Duration *– The estimated time, expressed in activity calendar days, required to complete an activity.*

Schedule *– Activities organized by relationships to depict the plan for execution of a project.*

Scheduled Completion Date *– The completion date forecast by the CPM schedule. The schedule may also forecast intermediate completion dates or durations for milestones, phases, or other portions of the project.*

Successor *– An activity that is defined by schedule logic to succeed another activity. The start or finish date of a successor may be controlled by its predecessor.*

Total Float *– The amount of time an activity can be delayed and not delay the Substantial Completion Date.*

(c) Required Schedule Submissions

1. Project Baseline Schedule

The Project Baseline Schedule Submittal shall consist of a schedule in accordance with 108.04.1(d) and a narrative report in accordance with 108.04.1(e). The Project Baseline Schedule data date shall be the date of the notice to proceed and the schedule shall not include any actual start or actual finish dates for any activity. The Project Baseline Schedule Submittal shall be made in accordance with Section 1.4 of the Technical Provisions.

2. Project Status Schedule

The Project Status Schedule Submittal shall consist of a CPM schedule in accordance with 108.04.1(d) and a narrative report in accordance with 108.04.1(e). The first monthly Project Status Schedule shall be submitted by the 7th of the month following acceptance of the Project Baseline Schedule. Each succeeding Project Status Schedule shall be submitted by the 7th of each succeeding month. The Project Status Schedule data date shall be the last date of the month prior to Submittal. The Project Status Schedule shall not include any actual start or actual finish dates later than the data date for any activity. If the 7th day of an individual month is a Saturday, Sunday, or a Holiday on which work has been suspended, the monthly Project Status Schedule shall be submitted by the first business day following the 7th.

If the Design-Build Contractor fails to submit a Project Status Schedule by the required date, IFA will withhold progress estimates until the Project Status Schedule Submittal is made.

3. Final Schedule

The Final Schedule shall consist of a CPM schedule in accordance with 108.04.1(d). The Final Schedule shall be submitted no later than 30 calendar days after Final Acceptance. The Final Schedule shall depict the actual start and finish dates for each activity. The data date of the Final Schedule shall be the date of Final Acceptance. If the Design-Build Contractor fails to submit the Final Schedule by the required date, IFA will withhold progress estimates until the Final Schedule is submitted.

4. Acceptance of Schedules

IFA will provide written notice within 14 calendar days of receipt of a Baseline, Project Status, or Final Schedule that the schedule is either accepted or rejected. If the notice indicates that a schedule is rejected, the contractual basis for rejection will be identified. If IFA does not respond in writing to the Submittal of a schedule within the allotted time, the schedule shall be considered to be accepted.

IFA's written notice of acceptance or rejection may include questions, comments, or request additional information. The next schedule submittal's narrative report shall address all

questions, comments, or additional information requested by IFA.

Rejected Baseline Schedules shall be resubmitted until accepted by IFA.

A rejected Project Status Schedule which immediately follows an accepted Baseline or Project Status Schedule will not require resubmittal. Project Status Schedules that are rejected for a second consecutive month shall be resubmitted within 14 days of the date of the rejection notification. Subsequent rejections will require additional Submittals until acceptance. If the Design-Build Contractor fails to submit a Project Status Schedule requiring resubmittal by the required date, IFA will withhold progress estimates until the Project Status Schedule is submitted.

Rejected Final Schedules shall be resubmitted until accepted by IFA. Resubmittal of a Final Schedule shall be made within 14 calendar days of receipt of rejection notification. If the Design-Build Contractor fails to resubmit a rejected Final Schedule by the required date, IFA will withhold progress estimates until the Final Schedule is submitted.

IFA's review of a submitted schedule will be for compliance with the specifications. Acceptance by IFA does not relieve the Design-Build Contractor of responsibility for the accuracy or feasibility of the schedule. Acceptance of a schedule does not constitute a modification of the contract or endorsement or validation of the Design-Build Contractor's logic, activity durations, or assumptions in creating the schedule. Acceptance of a schedule does not guarantee that the project can be performed or completed as scheduled. Omissions and errors in a schedule shall be corrected in the next schedule Submittal and will not entitle the Design-Build Contractor to a contract adjustment.

5. Float and Scheduled Completion

Total float belongs to the project and shall be a shared commodity between the Design-Build Contractor and IFA. Float is not for the exclusive use or benefit of either party. Either party has full use of float until is it depleted.

Float generated during the course of the project due to the efficiencies of either party shall be considered to be part of total float.

Float generated during the course of the project due to favorable weather within a calendar month, where the number of days of inclement weather is less than the normal inclement weather days for the month, shall be considered to be part of total float.

Negative float generated during the course of the project due to factors within the control of the Design-Build Contractor will not be a basis for requesting time extensions. Time extension requests shall be developed in accordance with 108.04.1(f).

A schedule may indicate a scheduled completion date in advance of the Substantial Completion Date or scheduled completion of work associated with a Completion Milestone or closure period prior to the corresponding contract date or period. However, IFA shall not be liable in any way

for the Design-Build Contractor's failure to complete the project prior to the Substantial Completion Date or complete work associated with any intermediate contract date or period prior to the original or revised date or period. Any costs incurred by the Design-Build Contractor as a result of such a failure shall be the responsibility of the Design-Build Contractor. The Design-Build Contractor will not be entitled to claim or recover any such cost from IFA.

An accepted schedule that indicates a scheduled completion date in advance of the Substantial Completion Date will be considered to have total float equal to the time between the scheduled completion date and the Substantial Completion Date.

(d) CPM Schedule Technical Requirements

Prepare the CPM schedule using Primavera Project Management software.

Each CPM schedule Submittal shall include the following:

1. A letter of transmittal identifying the schedule Submittal and contents.

2. A narrative report in accordance with 108.04.1(e). No narrative report is required for the Final Schedule.

3. An electronic file of the schedule in Primavera .XER format that is completely compatible with and may be directly imported without any loss or modification of data or need for any conversion or other software. Any electronic schedule file submitted by the Design-Build Contractor that is not completely compatible with IFA's Primavera software will be rejected.

4. A copy of the critical path Gantt chart, including lines representing relationships between activities, measuring 11" x 17" or larger. This item is not required for an Final Schedule.

The schedule shall meet the following requirements:

1. The first activity on a schedule shall be a milestone for the Notice To Proceed (NTP). The last activity on a schedule shall be a milestone for the Substantial Completion Date and shall reflect the date of notice of presumptive completion of the entire contract in accordance with 105.15(b). The schedule shall not include activities related to the final inspection, performance of punchlist work, or removal of construction signs.

2. All Completion Milestones shall be shown in the schedule.

3. Project Baseline Schedules shall indicate that Completion Milestones and all closure periods meet contract requirements.

4. Project Status Schedules shall indicate that Completion Milestones and all closure periods meet contract requirements unless the narrative report indicates that there is an unresolved delay situation which is beyond the control of the Design-Build Contractor.

5. Codes for phase, location and responsibility shall be assigned for each activity. Additional activity codes may be used if approved by IFA.

6. Activities associated with work performed on a closed facility during a closure period shall be assigned a distinct activity phase code to allow a comparison of the scheduled closure period to the contract closure period.

7. Each activity shall have a unique description and activity identification number which shall not be modified or re-assigned after acceptance of the Project Baseline Schedule.

8. Each activity description shall generally describe the work type and location and shall be associated with only one operation.

9. Each construction related activity shall have an original duration not to exceed 20 activity calendar days unless approved by IFA. It is permissible for activities related to fabrication, utility relocation, permit acquisition, and other non-construction activities to have longer original durations.

10. Activities for Submittal reviews by IFA shall allow reasonable durations, but in no case less than 14 calendar days unless otherwise specified or approved by IFA.

11. Each activity, except the first activity, shall have at least one predecessor.

12. Each activity, except the last activity, shall have at least one successor.

13. No start-to-finish activity relationships shall be used. Activity finish-to-start relationships shall include no lags. Finish-to-finish or start-to-start activity relationships may use lags that include fewer days than the original duration of the predecessor activity.

14. The use of lags with a negative value shall not be used for any activity relationship type.

15. All activities shall have their start and finish tied to the logic of the schedule.

16. Activities shall not be constrained unless noted herein or approved by IFA. The Completion Milestone dates shall be constrained using a finish on or before constraint. Delayed start dates shall be constrained using a start on or after constraint.

17. Each activity shall be assigned to an activity calendar. A schedule may utilize more than one activity calendar, but only one activity calendar shall be assigned to each activity. All activity calendars shall be project calendars as classified by Primavera.

18. Activity calendars associated with construction activities shall include a minimum number of non-work days for the months of April through November, inclusive, equal to the number of above normal inclement weather days shown in 101.02. However, the number of non-work days included in calendars associated with bridge, traffic, and road construction activities shall be equal to or greater than the tabulated value related to B, T, or R contracts respectively, regardless of the type of contract involved.

19. Activity calendars for non-work activities, including but not limited to Submittals, reviews, procurement, fabrication, cure times, and utility relocations performed by others shall not show any non-work days.

20. Seasonal weather conditions and Design-Build Contractor scheduled shut down periods shall be considered and included in the activity calendars for all work scheduled from December 1 through March 31.

21. Schedule calculations shall be performed using the following settings: retained logic; contiguous activity durations for individual activities; critical path based on longest path; and total float based on activity finish dates.

22. Cost- and resource-load the Schedule as the basis to administer the payments to the Design-Build Contractor and track production. Utilize cost accounts reflective of Schedule of Values and assign applicable cost-loaded activities to respective cost accounts. The costs assigned to Schedule activities roll up to equal the price for each item identified in the Schedule of Values. The total cost of all Schedule activities equals the Contract Price

23. Resource-load the Schedule to include a reasonable estimate of either a commodity or labor hour upon which value or production is based.

24. The cost assigned to individual Schedule activities may not artificially inflate, imbalance, or front-load the items. Substantiate an activity if INDOT questions the definition, costs, or production rate of it.

25. Provide two user-defined fields to identify Start Station and End Station for each

construction activity.

(e) Narrative Reports

The Design-Build Contractor shall submit a narrative report with each baseline and status schedule Submittal to describe and elaborate on the Work identified in the schedule. Conflicting information between the narrative report and associated schedule will be cause for rejection of a baseline or status schedule.

Information included in narrative reports will not be considered to meet the requirements for contractual notice of a changed condition in accordance with 105.16 or requests for additional contract time in accordance with 108.04.1(f). Separate correspondence meeting the applicable requirements shall be submitted by the Design-Build Contractor to serve as notice of a changed condition or a request for additional contract time.

For the Project Baseline Schedule Submittal, the narrative report shall include the following:

1. An explanation of the overall plan to complete the project, including where the Work will begin and how the Work will progress through the project.

2. Statements comparing the scheduled completion date or duration to the Substantial Completion Date, Completion Milestones and all closure periods.

3. An explanation of the planned Work schedule, including the planned number of workdays per week, planned number of shifts per day, whether night shifts are planned, number of hours planned per shift, holidays planned to be observed, extent of work planned for the winter months, and how the schedule calendars accommodate the required number of adverse weather days for each month. If multiple crews are planned, the above information shall be provided for each crew.

4. Description of the Work to be completed each construction season and during each winter for multi-year projects.

5. A detailed description of any unresolved actual or anticipated problems or issues. If a contractual notice of a changed condition or a claim in accordance with 105.16 has been submitted and IFA response is pending, the description shall indicate dates associated with each Design-Build Contractor Submittal.

6. A description of any unresolved actual or anticipated delays, including identification of the type of delay, the cause of the delay, responsibility for the delay, identification of all delayed critical activities, the effect of the delay on other activities and project milestones and identification of actions required to mitigate the delay. If the Design-Build Contractor has submitted a request for additional contract time in accordance with 108.04.1(f) and IFA response is pending, the description shall indicate the date of the Design-Build Contractor Submittal.

7. A detailed description of the critical path.

8. An explanation of the use of any constraints, including the reason and purpose for each constraint.

9. A statement describing the status of any required permits.

10. A statement describing the reason for the use of each lag.

11. A list of all proposed exceptions to this specification included in the schedule that require approval by IFA along with an explanation of why the exception is appropriate.

For each Project Status Schedule Submittal, the narrative report shall include the following:

1. A statement comparing the scheduled completion date to the Substantial Completion Date and any change in the scheduled completion date from the previous accepted Submittal and an explanation of time gained or lost to each Completion Milestone and the Substantial Completion Date.

2. An explanation if the scheduled completion date is projected to occur after the Substantial Completion Date.

3. A statement comparing the scheduled completion of work associated with each closure period in the contract as well as any changes in the closure periods from the previous accepted Submittal.

4. An explanation if work associated with any contract milestone date or closure period is projected to occur after the dates or projected to require a longer duration than set out in the contract.

5. A list of activities that have been added or deleted from the schedule since the last accepted Submittal and an explanation for the addition or deletion.

6. A list of all changes in activity relationships, predecessors, or successors since the last accepted Submittal and an explanation for each change.

7. A list of activities with original durations that have been changed since the last accepted Submittal along with an explanation regarding how the change is planned to be accomplished.

8. A description of the work performed since the last accepted Submittal.

9. A description of and explanation for any changes between the work performed since the last accepted Submittal and the work planned at the time that Submittal was made.

10. A detailed description of any unresolved problems that are anticipated or that have been encountered. If a contractual notice of a changed condition or a claim in accordance with 105.16 has been submitted and IFA response is pending, the description shall indicate the date of the notice or claim Submittal.

11. A statement that identifies any unresolved actual and anticipated delays. The statement should include identification of the delayed activity, the party apparently responsible for the delay, the type of delay, the cause of the delay, the effect of the delay on other activities and project milestones and identification of actions required to mitigate the delay. If the Design-Build Contractor has submitted a request for additional contract time in accordance with 108.04.1(f) and IFA response is pending, the statement shall indicate the date of the Design-Build Contractor request.

12. A detailed description of the critical path.

13. A list of activities which have become critical since the last accepted Submittal.

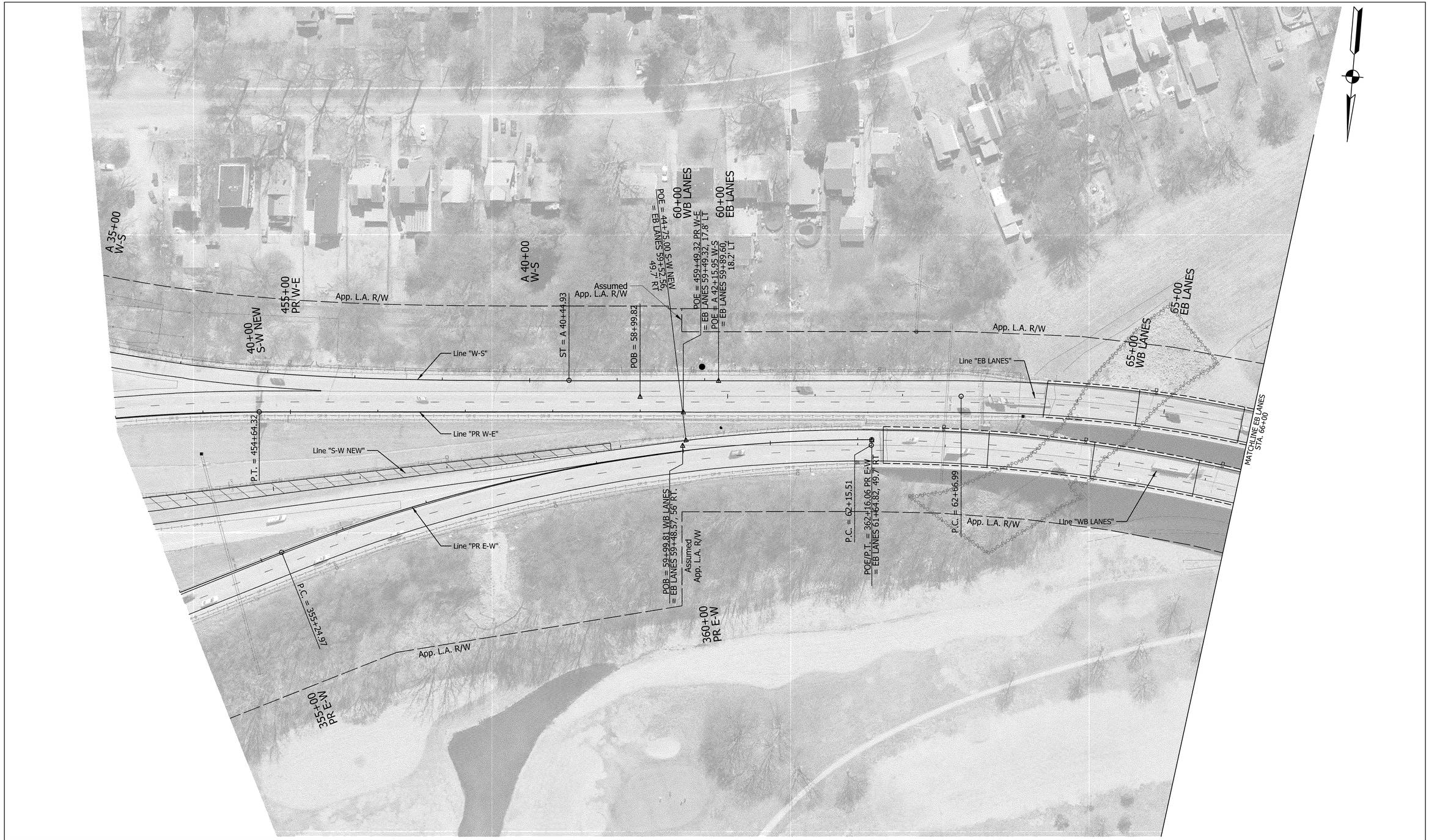
(f) Extension of Contract Time

If the Design-Build Contractor believes Work on the contract has been delayed for reasons beyond its control, a written request for extension of contract time may be submitted in accordance with 108.08. The Design-Build Contractor's request for extension of time shall be submitted in conjunction with the first Project Status Schedule Submittal that is made after the delay mitigation work is complete. A Project Status Schedule which accompanies a time extension request shall utilize a data date which is the date that the delay mitigation work is complete.

The determination of contract time extension will be based solely on IFA's comparison of the Project Status Schedule Submittal associated with the time extension request and the last accepted schedule prior to the beginning of the delay event.

Delays or suspensions of work due to the Design-Build Contractor's failure to comply with the specifications will not be cause for additional compensation or extension of contract time.

ATTACHMENT 1-2 PLANNED ROW LIMITS



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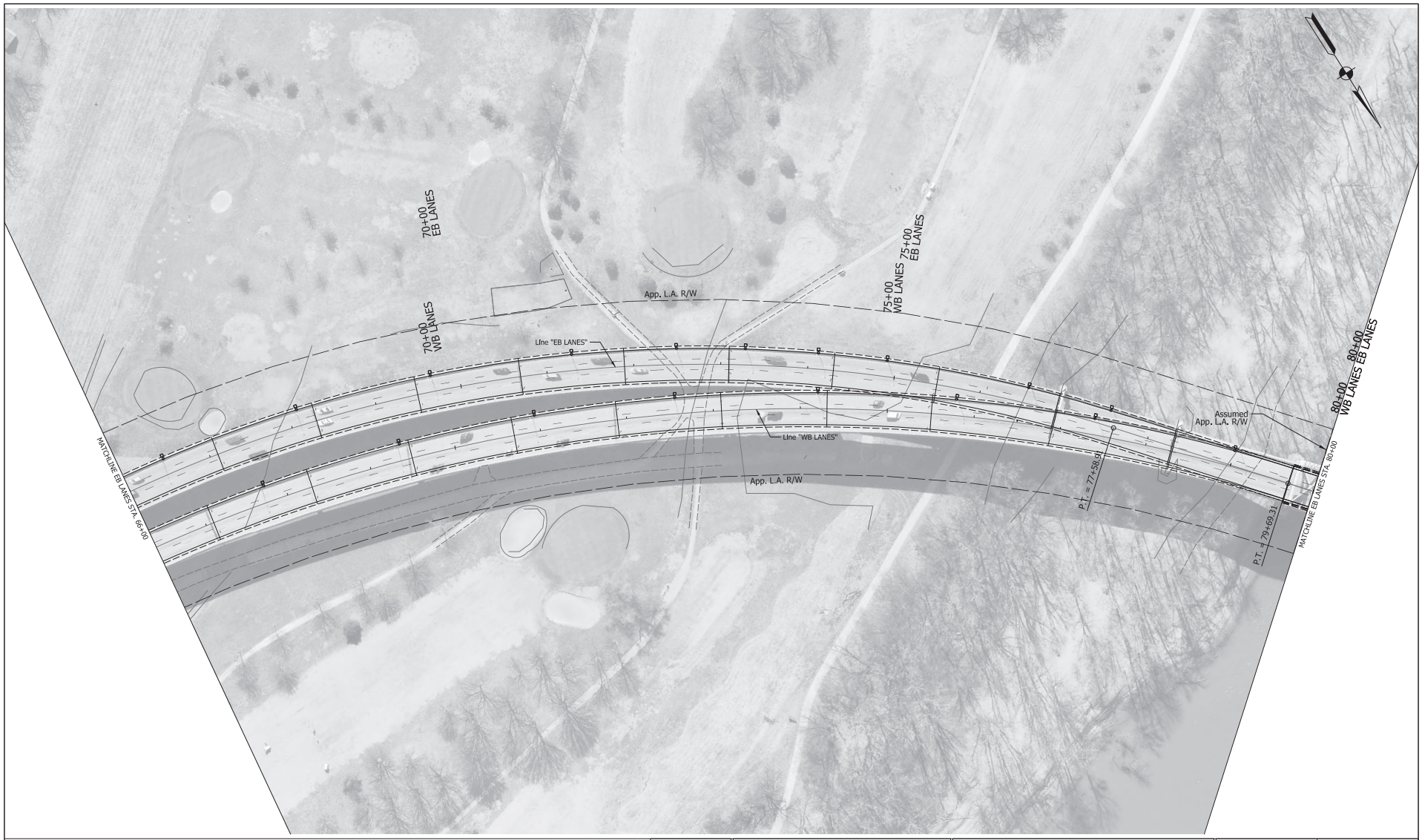
01-JUN-2020

ATTACHMENT 1-2 PLANNED ROW LIMITS



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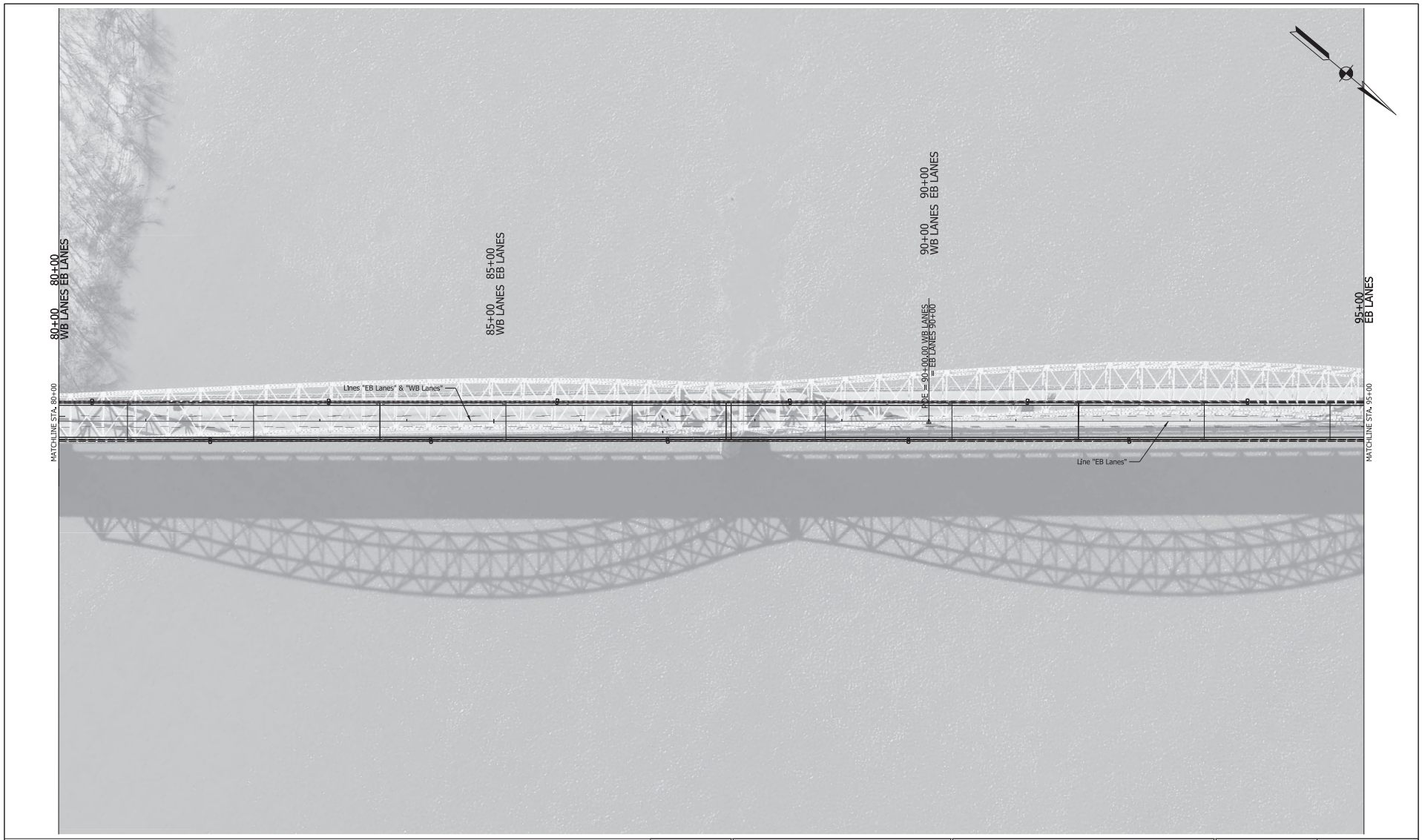
01-JUN-2020

ATTACHMENT 1-2 PLANNED ROW LIMITS



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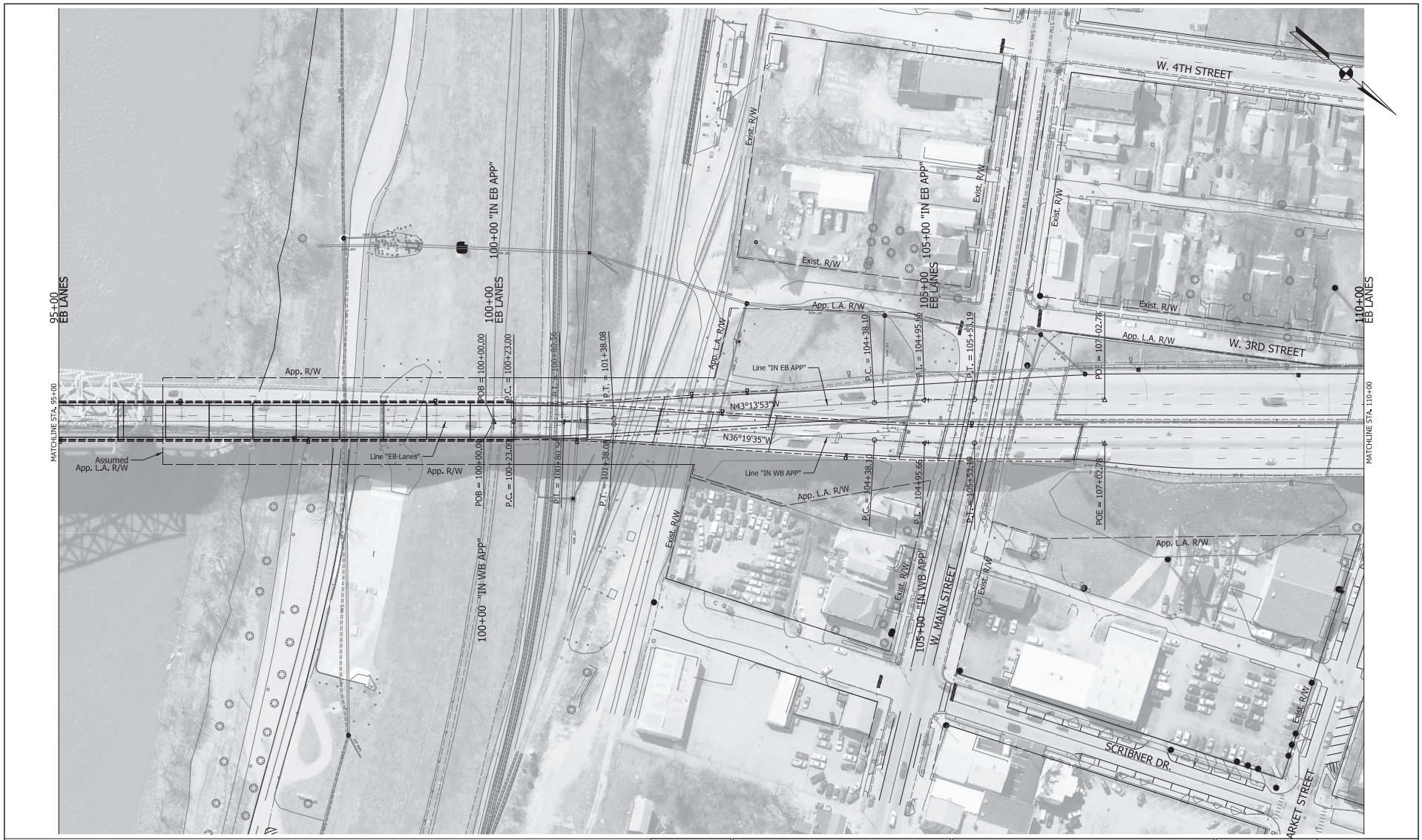
01-JUN-2020

ATTACHMENT 1-2 PLANNED ROW LIMITS



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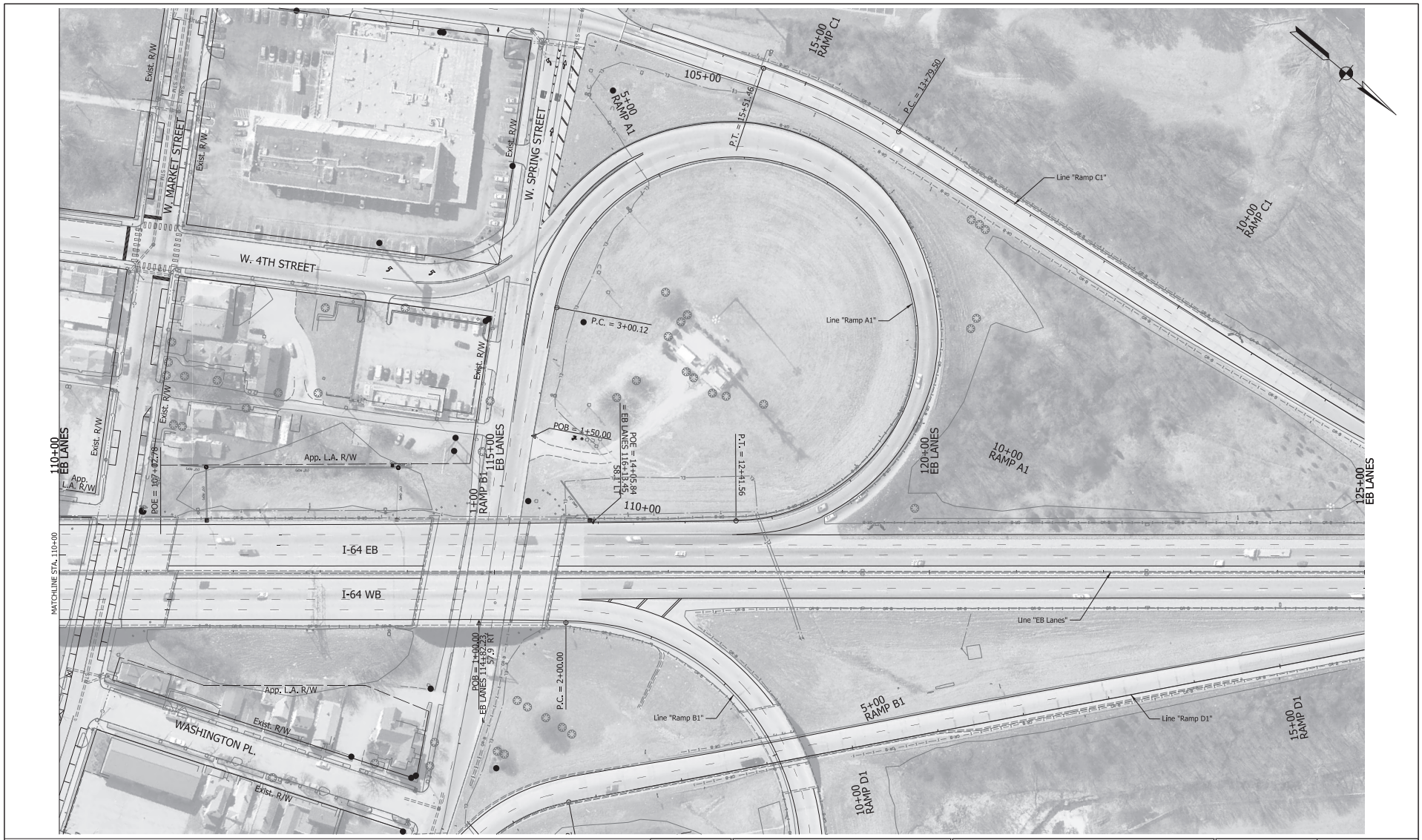
01-JUN-2020

ATTACHMENT 1-2 PLANNED ROW LIMITS



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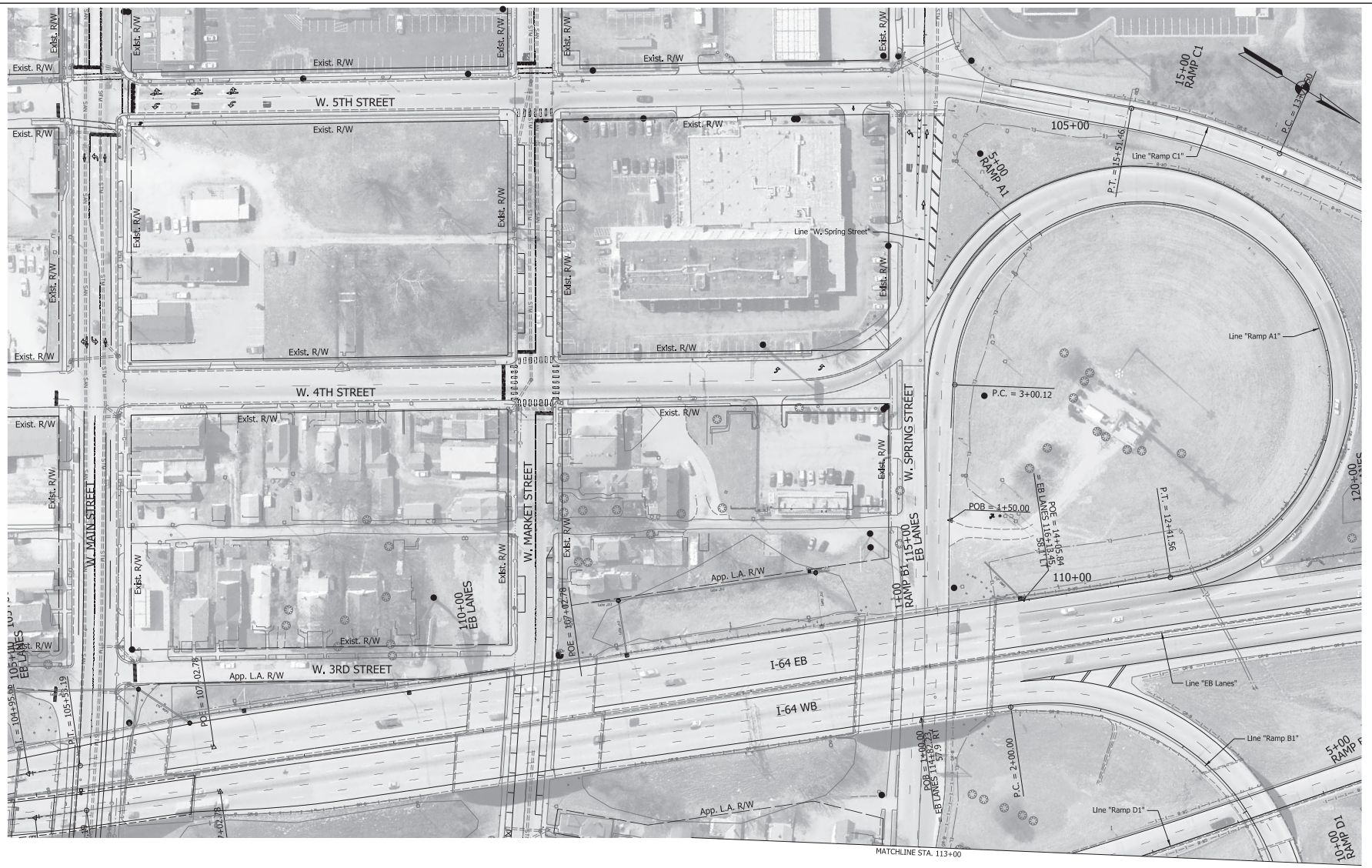
01-JUN-2020

ATTACHMENT 1-2 PLANNED ROW LIMITS



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01-JUN-2020

ATTACHMENT 1-2 PLANNED ROW LIMITS

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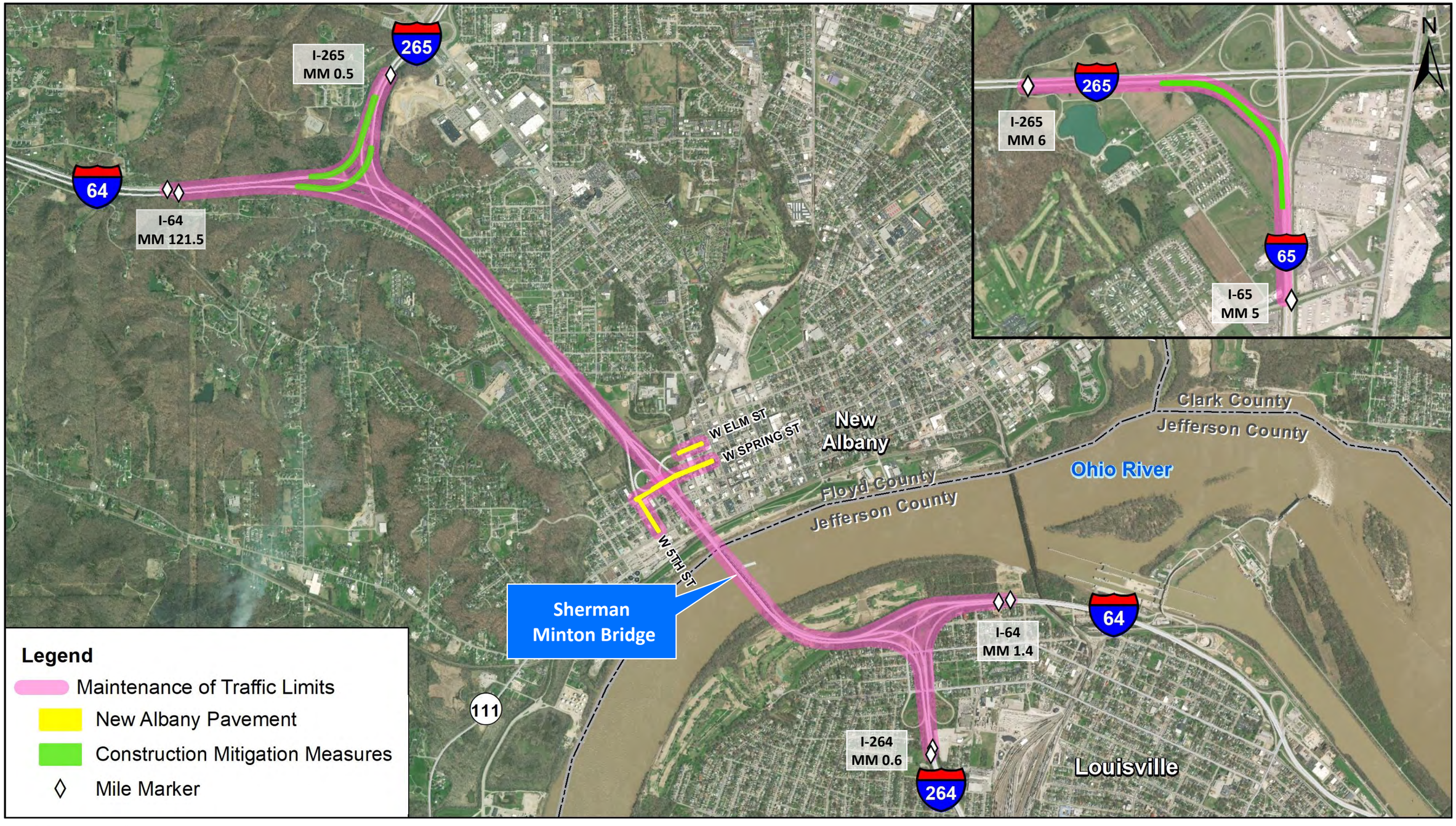
01-JUN-2020

ATTACHMENT 1-3 Maintenance of Traffic Limits

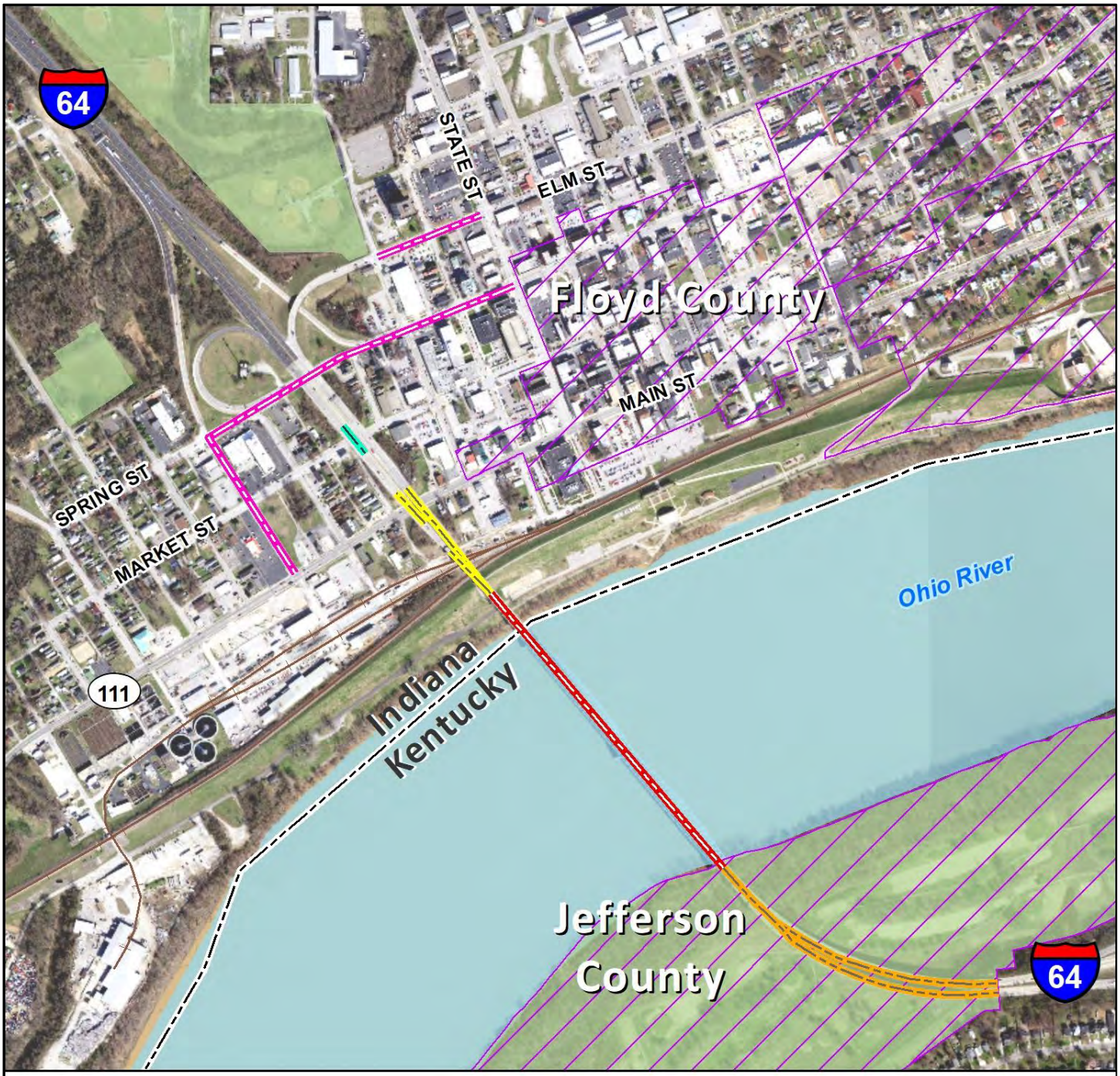
MAINTENANCE OF TRAFFIC LIMITS



ATTACHMENT 1-4 General Project Location

GENERAL LOCATION OF THE PROJECT

SHERMAN MINTON RENEWAL



Legend

- Bridge Deck Replacement, Structural Repairs & Bridge Painting
- Bridge Deck Replacement & Bridge Painting
- Bridge Deck Overlay
- Bridge Painting
- HMA Overlay
- Historic District
- Park

INDIANA DEPARTMENT OF TRANSPORTATION INDOT

KENTUCKY TRANSPORTATION CABINET

ATTACHMENT 3-1
APPLICABLE STANDARDS

3-1.1 Introduction

Design-Build Contractor shall design and construct the Work in accordance with the relevant requirements of the Project Standards listed in Table 3-1 of this Attachment 3-1. In some instances, only specific sections of the referenced standard apply, as specified in these Technical Provisions. Section 1.3 of the PPA defines the order of precedence for the PPA documents. Section 1.3.4 and 1.3.5 of the PPA provides requirements regarding irreconcilable conflicts, ambiguities or inconsistencies among the Project Standards.

In accordance with Section 2.1.2.5 of the PPA, Design-Build Contractor shall use the most current version of each standard or reference listed in Table 3-1 as of the Setting Date, unless expressly stated otherwise in the PPA Documents.

Any standards, manuals and guidelines that are not included within the definition of Project Standards must be approved by IFA prior to use by Design-Build Contractor. Any manuals or documents other than those reflected herein or elsewhere in the PPA Documents require IFA's prior approval before use in the Work. Design-Build Contractor shall obtain advance prior written approval from IFA for any Deviation from the Project Standards, in addition to complying with any other requirements regarding requested Deviations set forth in the PPA Documents.

Design-Build Contractor shall be responsible to communicate with the applicable Utility Owner to determine the applicable Adjustment Standards for any Utility Adjustment Work.

3-1.2 Modifications to INDOT Standards

The following notes apply to the INDOT standards used on the Project:

1. Certain standards have been created as internal guidance documents and not as mandatory requirements. However, for purposes of this Project, all provisions of standards, including the figures and tables, are mandatory, and guidelines are to be applied as requirements. All words such as "should," "may," "must," "might," "could," and "can" shall mean "shall" unless the context requires otherwise, as determined in the sole discretion of INDOT. Design-Build Contractor shall disregard qualifying words such as "usually," "normally," and "generally." References to INDOT practices and policies shall be construed to be mandatory requirements unless the context requires otherwise. It shall be in IFA's sole discretion to determine when the context does not require a provision to be mandatory.

2. In accordance with Sections 2.1.2.5 of the PPA, if the INDOT standard expires during the course of this Project, Design-Build Contractor shall contact IFA to determine whether the standard shall continue to be used or will be replaced.

3. When a reference to "Engineer" relates to design responsibilities or other technical issues, "Engineer" shall mean Design-Build Contractor's Design Manager or Designer. When a reference to "Engineer" relates to administrative issues, "Engineer" shall mean IFA. It shall be in IFA's sole discretion to determine whether the context refers to

technical or administrative responsibilities. All references to INDOT offices and personnel shall mean Design-Build Contractor's similar offices and personnel.

4. All references related to measurement for payment, method of measurement, basis of payment, extra work, contract adjustments, adjustment of unit prices, quality adjustments, or similar phrases shall be disregarded by Design-Build Contractor, with the exception of the following:

    a. Smoothness and quality pay adjustment factors for pavement in accordance with Section 401 and 501 of the Standard Specifications

    b. Quality adjustments for stormwater management as it pertains to erosion and sediment control in accordance with Section 205.08 of the Standard Specifications

    c. Retro-reflectivity measurements for performance-based pavement markings in accordance with Section 808.07 of the Standard Specifications

5. References to "additional work," "adjustment to compensation," "extra work," "pay extra," "at the expenses to the Department," or similar phrases shall be disregarded, with the exception of the above list under item 4. Payment, and adjustments thereto, as more fully described in Section 12 of the PPA, will be full compensation for all Work performed pursuant to the PPA Documents unless specific provisions for additional payments are contained in the PPA Documents.

6. No changes have been made to provisions in any standards that do not apply to this Project, but that provide general information (e.g., descriptions of INDOT divisions and their duties, descriptions of legal authority, or descriptions of internal INDOT procedures); however, in some cases it may not be clear whether rights or responsibilities are applicable to Design-Build Contractor. In accordance with Section 1.5 of the PPA, if it is unclear whether specific provisions in the standards are applicable to Design-Build Contractor, Design-Build Contractor shall notify IFA and IFA shall make that determination in its sole discretion.

7. Design-Build Contractor shall disregard the paragraphs within the standards relating to questions. All questions shall be taken to IFA.

8. When a standard refers to items that will be performed or provided by INDOT or by a division or employee of INDOT, Design-Build Contractor shall construe the requirements as applying to Design-Build Contractor unless otherwise specified in the PPA Documents, or unless the context requires otherwise. It shall be in IFA's sole discretion to determine when the context requires otherwise.

9. When a standard refers to an action being necessary or needed, Design-Build Contractor shall construe the action as required, unless the context requires otherwise, as determined in the sole discretion of IFA.

10. Phrases relating to item(s) or activity(ies) that "will be" conducted, that are "most easily accomplished by," that "are recommended," that are "desired," that are "usually necessary," that "should preferably be" done, that "might require," that are "necessary" or "as necessary", and that are "required" or "done" shall be construed to be mandatory requirements unless the context requires otherwise, as determined in the sole discretion of IFA. Phrases relating to activity(ies) that should not be conducted, such as "is not normally used," "is not good practice," "should never be done," "cannot be used," or

"should be avoided," shall be construed as prohibited. It shall be in IFA's sole discretion to determine when the context either requires or does not require a provision to be mandatory.

11. Where the notes refer to items that are indicated in the Plans or special provisions or required in the Plans or special provisions, "plans or special provisions" shall mean Design-Build Contractor's Plans or special provisions.

12. References to approved products or materials shall mean such products or materials approved by INDOT.

13. Design-Build Contractor shall use forms as required to report the same information and in the same format as INDOT forms shown in the standards.

14. If Design-Build Contractor believes that an item in the standards is unclear, Design-Build Contractor shall notify IFA. Regardless of whether Design-Build Contractor notifies IFA, IFA shall always have the right to notify Design-Build Contractor if Design-Build Contractor is interpreting a requirement incorrectly.

15. All references to "you" or "your" shall mean Design-Build Contractor unless otherwise directed by IFA.

16. When a standard refers to items that will be performed or provided by INDOT or by a division or employee of INDOT, Design-Build Contractor shall construe the requirements as applying to Design-Build Contractor unless otherwise specified in the PPA Documents, or unless the context requires otherwise. It shall be in IFA's sole discretion to determine when the context requires otherwise.

17. The following sections of Standard Specifications Section 100 – General Provisions are deleted as they are superseded by the PPA: Sections 102, 103.04, 103.05, 104.01, 104.02, 104.03, 105.02, 105.05, 105.06, 105.15, 105.16, 107.06, 107.17, 107.19, 107.22, 107.23, 107.24, 107.25, 108.02, 108.03, 108.08, 108.09, 108.10, 108.11, 108.12, 109 (excepting language specific to pay factors as noted above in item 4), 110, 111, and 113.

18. Section 108.01 of the Standard Specifications is revised to read: "The subcontractor shall be in accordance with the requirements of 105 IAC 11-2-10, Subcontractors."

3-1.3 List of Project Standards

Table 3-1: Standards and References

The Applicable Standards shall be, but not limited to, those listed below, with approval of other standards at IFA's sole discretion.

IS: Industry standard, Design-Build Contractor's responsibility to acquire.

W: Standard available online at Author/Agency's website, Design-Build Contractor's responsibility to acquire. (Web sites are listed for some of the standards listed below for information only. The Web sites listed are not guaranteed to be correct. It is ultimately Design-Build Contractor's responsibility to locate the required standard and to determine if the standard has been modified pursuant to this RFP.)

Author/Agency	Title	Availability
INDOT	Standard Specifications http://www.in.gov/dot/div/contracts/standards/book/index.html	W
INDOT	Recurring Special Provisions & Plan Details http://www.in.gov/dot/div/contracts/standards/rsp/index.html	W
INDOT	INDOT Directives https://www.in.gov/indot/div/mt/directives/directives.htm	W
INDOT	INDOT Standard Drawings http://www.in.gov/dot/div/contracts/standards/drawings/index.html	W
INDOT	INDOT Design Memos https://www.in.gov/dot/div/contracts/standards/memos/memos.html	W
INDOT	Design Manual (IDM) including Design Memoranda http://www.in.gov/indot/design_manual/design_manual_2013.htm	W
INDOT	Approved Materials List http://www.in.gov/indot/div/mt/appmat/appmat.htm	W
INDOT	Indiana Manual on Uniform Traffic Control Devices (IMUTCD) http://www.in.gov/dot/div/contracts/design/mutcd/mutcd.html	W
INDOT	Traffic Management Strategic Deployment Plan http://www.in.gov/indot/3045.htm	W
INDOT	Work Zone Safety Mobility Policy http://www.in.gov/dot/div/contracts/standards/	W
INDOT	Professional Services Contract Administration Manual http://www.in.gov/indot/2733.htm	W
INDOT	Construction Memorandums http://www.in.gov/dot/div/contracts/conmemo/con_memo.htm	W
INDOT	Geotechnical Design Manual, Guidelines, Memoranda, Forms, and Approved Contractors, Consultants, & Materials http://www.in.gov/indot/2804.htm	W
INDOT	Public Involvement Policies and Procedures Manual http://www.in.gov/indot/2366.htm	W

Author/Agency	Title	Availability
INDOT	Total Storm Management Manual http://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=1000&context=jtrpdocs	W
INDOT	Storm Water Management Field Guide https://www.in.gov/indot/files/Indiana_Storm_Water_Field_Guide.pdf	W
INDOT	Utility Accommodation Policy http://www.in.gov/indot/3787.htm	W
INDOT	Utility Facility Relocations on Construction Contracts (105 IAC 13) http://www.in.gov/indot/3787.htm	W
INDOT	Bridge Inspection Manual http://www.in.gov/dot/div/contracts/standards/bridge/bridgeinspect.htm	W
INDOT	Manual for Frequency of Sampling and Testing and Basis for Use of Materials http://www.in.gov/indot/2736.htm	W
INDOT	Procedural Manual for Preparing Environmental Documents https://www.in.gov/indot/files/Procedural_Manual_for_Preparing_Environmental_Studies_2008.pdf	W
INDOT	Waters of the US Documentation https://www.in.gov/indot/files/Waters%20of%20the%20US%20Documentation.pdf	W
INDOT	Waterway Permitting Manual https://www.in.gov/indot/files/Waterway-Permit-Manual%20-%204%202019%20POSTING.pdf	W
INDOT	Cultural Resources Manual https://www.in.gov/indot/crm/	W
INDOT	Traffic Noise Analysis Procedure https://www.in.gov/indot/files/2017%20INDOT%20Noise%20Policy.pdf	W
INDOT	Real Estate Manuals http://www.in.gov/indot/2493.htm	W
INDOT	Right-of-Way Engineering Manual, and Revisions http://www.in.gov/indot/2731.htm	W
INDOT	Site Assessment & Management Manual https://www.in.gov/indot/files/Site%20Assessment%20%20Management%20Manual.pdf	W
INDOT	Cost Estimation System (CES) – Designer Instructions http://www.in.gov/dot/div/contracts/CES%20Designer%20Instructions.pdf	W
INDOT	Interstate Highways Congestion Policy https://www.in.gov/indot/3602.htm	W
INDOT	INDOT Bridge Aesthetics Policy https://www.in.gov/indot/files/Bridge%20Aesthetic%20Policy%207-18-18.pdf	W

Author/Agency	Title	Availability
KYTC	KYTC Transmittal Memorandum https://transportation.ky.gov/StructuralDesign/Transmittal%20Memos/Forms/AllItems.aspx	W
KYTC	KYTC Structural Design Guidance Manual, Chapters https://transportation.ky.gov/StructuralDesign/Structure%20Guidance%20Manuals/Chapters.pdf	W
KYTC	KYTC Structural Design Guidance Manual, Exhibits https://transportation.ky.gov/StructuralDesign/Structure%20Guidance%20Manuals/Exhibits.pdf	W
KYTC	KYTC Standard Drawings https://transportation.ky.gov/Highway-Design/Pages/2016-Standard-Drawings.aspx	W
KYTC	KYTC Standard Specifications for Road and Bridge Construction https://transportation.ky.gov/Construction/Pages/Kentucky-Standard-Specifications.aspx	W
KYTC	KYTC Geotechnical Guidance Manual https://transportation.ky.gov/Organizational-Resources/Policy%20Manuals%20Library/Geotechnical.pdf	W
KYTC	KYTC Drainage Guidance Manual https://transportation.ky.gov/Highway-Design/Pages/Drainage.aspx	W
KYTC	KYTC Design Memos	W
KYTC	KYTC Special Notes https://transportation.ky.gov/Construction/Pages/Special-Notes-Special-Provisions.aspx	W
KYTC	KYTC Active Sepias https://transportation.ky.gov/Highway-Design/Pages/Sepias2017.aspx	W
KYTC	KYTC Traffic Operations Guidance Manual https://transportation.ky.gov/Organizational-Resources/Policy%20Manuals%20Library/Traffic%20Operations.pdf#search=Traffic%20Operations%20Guidance%20Manual	W
KYTC	Kentucky Bridge Inspection Procedures Manual https://transportation.ky.gov/Maintenance/Documents/2020%20Bridge%20Inspection%20Procedures%20Manual.pdf#search=Bridge%20Inspection%20Procedures%20Manual	W
KYTC	KYTC Utilities & Rails Guidance Manual https://transportation.ky.gov/Organizational-Resources/Policy%20Manuals%20Library/Utilities%20and%20Rails.pdf	W
KYTC	KYTC Right Of Way Guidance Manual https://transportation.ky.gov/Organizational-Resources/Policy%20Manuals%20Library/RightOfWay.pdf	W

Author/Agency	Title	Availability
AASHTO	T88, T194 and T289	IS
AASHTO	A Guide for Transportation Landscape and Environmental Design	IS
AASHTO	Guide for the Planning, Design, and Operation of Pedestrian Facilities	IS
AASHTO	Guide for the Development of Bicycle Facilities	IS
AASHTO	A Guide for Achieving Flexibility in Highway Design	IS
AASHTO	A Policy on Geometric Design of Highways and Streets	IS
AASHTO	Roadside Design Guide	IS
AASHTO	A Policy on Design Standards – Interstate System	IS
AASHTO	Highway Safety Design and Operations Guide	IS
AASHTO	Roadway Lighting Design Guide	IS
AASHTO	LRFD Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals	IS
AASHTO	An Informational Guide for Roadway Lighting	IS
AASHTO	Standard Specifications for Transportation Materials and Methods of Sampling and Testing	IS
AASHTO	LRFD Bridge Design Specifications	IS
AASHTO	Standard Specifications for Highway Bridges	IS
AASHTO	Manual for Bridge Evaluation	IS
AASHTO	Guide Design Specifications for Bridge Temporary Works	IS
AASHTO	LRFD Guide Specifications for Accelerated Bridge Construction	IS
AASHTO	LRFD Bridge Construction Specifications	IS
AASHTO	Bridge Security Guidelines	IS
AASHTO	Manual on Subsurface Investigations	IS
AASHTO	Manual for Assessing Safety (MASH)	IS
AASHTO/AWS	D1.5M/D1.5:2010 Bridge Welding Code	IS
AASHTOWare	Bridge Rating (BrR) Tool for Rating Bridge Superstructures	IS
AISC	American Institute of Steel Construction – Steel Construction Manual	IS
FAA	Notice of Proposed Construction or Alteration https://oeaaa.faa.gov/oeaaa/external/portal.jsp	W
FHWA	Flexibility in Highway Design http://www.fhwa.dot.gov/environment/publications/flexibility/	W
FHWA	Code of Federal Regulations, Title 23 (Highways), Chapter 1, Part 752 Landscape and Roadside Development http://www.fhwa.dot.gov/legsregs/directives/cfr23toc.htm	W
FHWA	FHWA-RD-03-031: Distress Identification Manual for the Long-Term Pavement Performance Program https://www.fhwa.dot.gov/publications/research/infrastructure/pavements/ltpp/reports/03031/03031.pdf	W
FHWA	FHWA-NHI-016-072 - Geotechnical Engineering Circular No. 5: Geotechnical Site Characterization	IS

Author/Agency	Title	Availability
FHWA	FHWA-NHI-16-009 & 010 - Geotechnical Engineering Circular No. 12: Design and Construction of Driven Pile Foundations, Volumes I & II https://www.fhwa.dot.gov/engineering/geotech/library_listing.cfm?TitleStart=G	W
FHWA	Manual on Uniform Traffic Control Devices (MUTCD) http://mutcd.fhwa.dot.gov/	W
FHWA	Indiana Manual of Uniform Traffic Control Devices (IMUTCD) https://www.in.gov/dot/div/contracts/design/mutcd/2011rev1MUTCD.htm	W
FHWA	Roadway Lighting Handbook http://safety.fhwa.dot.gov/roadway_dept/night_visib/lighting_handbook/	W
FHWA	FHWA-NHI-14-007 - Geotechnical Engineering Circular No. 7: Soil Nail Walls https://www.fhwa.dot.gov/engineering/geotech/library_listing.cfm?TitleStart=G	W
FHWA	FHWA-IF-99-015 - Geotechnical Engineering Circular No. 4: Ground Anchors and Anchored Systems https://www.fhwa.dot.gov/engineering/geotech/library_listing.cfm?TitleStart=G	W
FHWA	FHWA-IF-02-054 – Geotechnical Engineering Circular No. 6: Shallow Foundations https://www.fhwa.dot.gov/engineering/geotech/library_listing.cfm?TitleStart=G	W
FHWA	FHWA-IF-090919 - Connection Details for Prefabricated Bridge Elements and Systems https://www.fhwa.dot.gov/bridge/prefab/if09010/report.pdf	W
FHWA	FHWA-NHI-10-016 - Geotechnical Engineering Circular No. 10: Drilled Shafts: Construction Procedures and LRFD Design Methods Manual https://www.fhwa.dot.gov/engineering/geotech/library_listing.cfm?TitleStart=G	W
FHWA	FHWA-NHI-10-024 - GEC 11 Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes Volume 1 https://www.fhwa.dot.gov/engineering/geotech/library_listing.cfm?TitleStart=G	W
FHWA	FHWA-NHI-10-025 - GEC 11 Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes Volume II https://www.fhwa.dot.gov/engineering/geotech/library_listing.cfm?TitleStart=G	W
FHWA	FHWA-NHI-16-027 & 028 - Geotechnical Engineering Circular No. 13 Ground Modification Methods Reference Manual - Volumes I & II	W
FHWA	Technical Manual for Design and Construction of Road Tunnels – Civil Elements, Report No. FHWA – NHI-10-034 http://www.fhwa.dot.gov/bridge/tunnel/pubs/nhi09010/foreward.cfm	W

Author/Agency	Title	Availability
FHWA	Program Guide Utility Relocation and Accommodation http://www.fhwa.dot.gov/reports/utilguid/	W
FHWA	Highway Performance Monitoring System (HPMS) Field Manual http://www.fhwa.dot.gov/ohim/hpmsmanl/hpms.cfm	W
FHWA	Railroad-Highway Grade Crossing Handbook http://safety.fhwa.dot.gov/xings/com_roaduser/07010/	W
FHWA	Manual for Repair and Retrofit of Fatigue Cracks in Steel Bridges https://www.fhwa.dot.gov/bridge/steel/pubs/hif13020/hif13020.pdf	W
FHWA	Technical Advisory on Uncoated Weathering Steel in Structures, October 3, 1989. https://www.fhwa.dot.gov/bridge/t514022.cfm	W
FHWA	Hydraulic Engineering Circular No. 21 (HEC-21), Design of Bridge Deck Drainage https://www.fhwa.dot.gov/engineering/hydraulics/pubs/hec/hec21.pdf	W
FHWA	Hydraulic Engineering Circular No. 22 (HEC-22), Urban Drainage Design Manual https://www.fhwa.dot.gov/engineering/hydraulics/pubs/10009/10009.pdf	W
ADA	Americans with Disabilities Act Accessibility Guidelines	IS
ANSI A300 (Part 1)	Tree Care Operations – Tree, Shrub and Other Woody Plant Maintenance – Standard Practices	IS
ANSI A300 (Part 2)	Tree Care Operations – Tree, Shrub and Other Woody Plant Maintenance – Standard Practices – Part 2 – Fertilization	IS
ANSI A300 (Part 3)	Tree Care Operations – Tree, Shrub and Other Woody Plant – Standard Practices – Part 3 – Tree Support Systems	IS
ANSI Z60.1	American Standard for Nursery Stock	IS
ANSI Z133.1	Safety Requirements for Pruning, Trimming, Repairing, Maintaining, and Removing Trees, and for Cutting Brush	IS
ANSI/IESNA RP-8-00	American National Standard Practice for Roadway Lighting	IS
ANSI/EIA/TIA	American National Standards Institute/Electronic Industries Alliance/Telecommunications Industry Association (ANSI/EIA/TIA) – 222-G Structural Standards for Antenna Supporting Structures and Antennas 568A 568B.3 Optical Fiber Cabling Components Standards 606 Administration Standard for Telecommunications Infrastructure	IS
TIA/EIA	The Telecommunications Industry Association & Electronic Industries Alliance Standards	IS
ASTM	Annual Books of Standards	IS
Hortus Third	A Concise Dictionary of Plants Cultivated in the United States and Canada (L. H. Bailey Hortorium, 1976)	IS

Author/Agency	Title	Availability
IDEM	Indiana Storm Water Quality Manual http://www.in.gov/idem/stormwater/2363.htm	W
IDEM	Rule 5 Permit https://www.in.gov/idem/stormwater/2331.htm	W
IDEM	Section 401 Water Quality Certification https://www.in.gov/idem/wetlands/2344.htm	W
IDEM	Isolated Wetlands Permit https://www.in.gov/idem/wetlands/2343.htm	W
IDNR	Indiana Drainage Handbook http://www.in.gov/dnr/water/4893.htm	W
IDNR	Guidelines for the Hydrologic-Hydraulic Assessment of Floodplains in Indiana http://www.in.gov/dnr/water/5710.htm	W
IEEE	National Electric Safety Code	IS
IES	Roadway Lighting Handbook, RP-8, Addendum: "Designing the Lighting System – Using Roadway Lighting"	IS
IES	DG-5-94, Recommended Lighting for Walkways and Class 1 Bikeways	IS
IES	RP-8-00, American National Standards for Roadway Lighting	IS
IHPC	Certificate of Appropriateness https://www.indy.gov/activity/historic-preservation-certificate-of-appropriateness	W
INDOT Aviation	Indiana Tall Structure Permit https://www.in.gov/indot/2808.htm	W
CIE	International Lighting Commission – CIE 127-2007, Technical Report: Measurement of LEDS	IS
Motorola	R56 Standards and Guidelines for Communication Sites	IS
NTCIP	National Transportation Communication for ITS Protocol Standards	IS
IGGA	Guide Specification - Next Generation Concrete Surface (NGCS) Construction on Newly Constructed Roadways http://igga.net/resources/specifications	W
ITE	Manual of Transportation Engineering Studies	IS
ITE	Traffic Engineering Handbook	IS
ITE	Preemption of Traffic Signals Near Railroad Crossings: An ITE Recommended Practice	IS
ITE	Equipment and Material Standards	IS
NCHRP	NCHRP Report 480, A Guide to Best Practices for Achieving Context Sensitive Solutions	IS
NEMA	National Electrical Manufacturer Association	IS
NFPA	NFPA 70 - National Electric Code	IS
NFPA	National Electric Safety Code	IS
NFPA	502-Standard for Road Tunnels, Bridges and Other Limited Access Highways	IS
NFPA	Standard for the Installation of Lightning Protection Systems, NFPA 780	IS

Author/Agency	Title	Availability
NECA	National Electrical Contractors Association Standard of Installation	IS
NETA	International Electrical Testing Association Standard ATS	IS
UL	Underwriters Laboratories, Inc., Lightning Protection Components, UL 96 and UL 96A	IS
USACE	Section 404 Permit https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/Obtain-a-Permit/	W
Telcordia	GR 196 Core Issue 2, Generic Requirements for Optical Time Domain Reflectometer (OTDR)	IS
TRB	Highway Capacity Manual	IS
TRB	NCHRP Report 529, Guideline and Recommended Standard for Geofoam Application in Highway Embankments	IS
Bellcore	Technical Advisories and Technical Requirements	IS
AREMA	Manual for Railway Engineering	IS
CSX	Bridge and Track Design Criteria, Specifications, and Standard Drawings	IS
PCI	Bridge Design Manual Volume I & II	IS
PCI	Design Handbook	IS
PCI	Full Depth Deck Panel Guidelines, For Accelerated Bridge Deck Replacement or Construction http://www.pcine.org/cfcs/cmsIT/baseComponents/fileManagerProxy.cfc?method=GetFile&fileID=2D90746A-F1F6-B13E-82A745AB150E0E16	W
CRSI	Concrete Reinforcing Steel Institute Manual of Standard Practice	IS
Access Board	Public Rights-of-Way Accessibility Guidelines (PROWAG) https://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way	W
CEB-FIB	CEB-FIB “Model Code 1990,” the latest edition with Revisions as of the issue date of this RFP, Chapter 2: Material Properties, for time dependent properties of concrete only.	IS
PTI	PTI Guide Specification, “Recommendations for Stay Cable Design, Testing and Installation”, the latest edition with Revisions as of the issue date of this RFP, (“soft” conversion of the Document’s metric units is required).	IS
PTI	PTI Guide Specification, “Grouting of Post-Tensioned Structures,” the latest edition with Revisions as of the issue date of this RFP.	IS
ACI	ACI 207.1 R-96, “Mass Concrete.”	IS
ACI	ACI 305 R-99, “Hot Weather Concreting.”	IS
ACI	ACI 306 R-02, “Cold Weather Concreting.”	IS

Author/Agency	Title	Availability
FIB	Bulletin 34, Model Code for Service Life Design" (*International Federation for Structural Concrete (fib),* February 2006*)*	IS

ATTACHMENT 7-1: Environmental Commitments Summary

COMMITMENT NUMBER	COMMITMENT TEXT	RESPONSIBLE PARTY
1	INDOT shall notify school corporations and emergency services at least two weeks prior to any construction that would block or limit access.	IFA
2	Workers who are working in or near water with E. coli wear appropriate PPE, observe proper hygiene procedures, including regular hand washing, and limit personal exposure.	Design-Build Contractor
3	Additional investigation may be necessary if construction generates sediment and/or disturbs soils in the Ohio River. Coordination with INDOT ES and KYTC will be required.	Design-Build Contractor
4	Any excavation which occurs in or near 44 W. 5th Street, New Albany, IN, will require analysis for lead prior to removal and disposal of soil and/or groundwater.	Design-Build Contractor
5	Accommodations will be provided for the following special events and festivals. Full bridge closures will not occur on: New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, Thunder over Louisville, Kentucky Derby, and Harvest Homecoming Festival.	Design-Build Contractor
6	Temporary access or use of any Section 4(f) or 6(f) resource during construction, will require the Design-Build Contractor to coordinate with necessary agencies including but not limited to INDOT, KYTC, FHWA, the City of New Albany, the City of Louisville, the Louisville Parks and Recreation, and the Ohio River Greenway Commission, as Section 4(f) or Section 6(f) analysis may be required.	Design-Build Contractor
7	Early coordination response information received from Indiana Geological Survey is to be reviewed by the Design-Build Contractor.	Design-Build Contractor
8	United States Coast Guard will require Design-Build Contractor to submit a work plan for review. A work conditions letter will be issued from the USCG before any work can commence.	IFA
9	No impacts will occur to the Ohio River due to construction. Should impacts be unavoidable Design-Build Contractor will be required to coordinate with Kentucky Division of Environmental Analysis to obtain clearance.	Design-Build Contractor
10	Design-Build Contractor shall coordinate the final design with KYTC. KYTC shall provide Kentucky SHPO with the final design and the final archeological effects recommendation.	Design-Build Contractor
11	KYTC shall determine the Area of Potential Effect for the final design prepared by Design-Build Contractor and coordinate with the appropriate consulting parties.	IFA
12	Work outside of the existing ROW Limits or MOT Limits will require coordination with INDOT and KYTC.	Design-Build Contractor
13	Restrict below low-water work in streams to placement of culverts, piers, pilings and/or footings, shaping of the spill slopes around the bridge abutments, and placement of the riprap.	Design-Build Contractor
14	Minimize the extent of hard armor (riprap) in bank stabilization by using bioengineering techniques whenever possible. If riprap is utilized for bank stabilization, extend it below low-water elevation to provide aquatic habitat	Design-Build Contractor
15	Implement pollution prevention and control measures during all construction activities to reduce the potential for hazardous spills or other materials entering the Ohio River. This will include the placement of refueling staging areas, fuel storage, and hazardous materials away from the river, and may also require specific containment measures for painting, sanding, etc.	Design-Build Contractor
16	If a causeway must be used, then locate the causeway primarily outside of the cobble/gravel substrate area, which is the most suitable habitat for many mussel species.	Design-Build Contractor
17	Install culverts/pipes within the causeway to allow continued flow of water through the area to prevent pooling and stagnation.	Design-Build Contractor
18	The height of the causeway should be kept to a minimum to allow over-topping during heavy rain events to prevent upstream flooding.	Design-Build Contractor
19	Use clean fill material and remove immediately once project is completed.	Design-Build Contractor
20	The causeway structure should not be in the stream longer than a year in order to minimize disruption of the mussel and host fish reproductive cycle.	Design-Build Contractor
21	All equipment to be used in the river should be inspected using accepted protocols and determined free of zebra mussel adults and veligers.	Design-Build Contractor
22	In the event a barge is used, all barge equipment maintenance will be conducted away from the river, whenever possible. Fuel storage shall be contained/maintained in an area where leakage and spilling into the river will be avoided.	Design-Build Contractor
23	Excavation for deadman anchors and steel cables would be performed in a manner to minimize the amount of surface disturbance, and appropriate measures would be implemented to prevent the discharge of material into the river channel. During excavation, temporary silt fence will be installed around each deadman anchor site during excavation and installation. Extreme caution will be exercised during excavation/installation activities to prevent sediment from being washed into the Ohio River.	Design-Build Contractor
24	Minimize impacts to shoreline and substrate via barge grounding.	Design-Build Contractor
25	Align the road along or through previously disturbed and degraded areas and disturb as narrow an area as possible to minimize negative impacts. Avoid tree removal to the greatest extent possible. Plant native hardwood trees to replace the vegetation destroyed during construction.	Design-Build Contractor
26	All plant material, mud, and debris should be removed, and all water drained from equipment before entering or leaving the waterway to prevent the spread of aquatic and terrestrial invasive species.	Design-Build Contractor
27	Avoid staging and construction access within or wooded areas to the extent possible.	Design-Build Contractor
28	Impacts to non-wetland forest of one (1) acre or more should be mitigated at a minimum 2:1 ratio. If less than one acre of non-wetland forest is removed in a rural setting, replacement should be at a 1:1 ratio based on area. Impacts to nonwetland forest under one (1) acre in an urban setting should be mitigated by planting five trees, at least 2 inches in diameter-at-breast height (dbh), for each tree which is removed that is 10 inches dbh or greater (5:1 mitigation based on the number of large trees).	Design-Build Contractor
29	The proposed project would require two applications to be submitted for authorization under Section 404 of the Clean Water	IFA

ATTACHMENT 7-1: Environmental Commitments Summary

	Act and Section 10 of the Rivers and Harbors act - one application for impacts to waters of the U.S. in Kentucky and one application for impacts in Indiana.	
30	If barges are to be moored on the Ohio River or doing any work on the river, a Section 10 permit would be required. A map showing the location of barges would be required, along with drawings stamped by a professional engineer showing the locations and mooring configurations (including locations of deadmen that would be installed). A narrative/description of the mooring configuration and work to be performed shall be provided.	IFA
31	Work within the river would require coordination with the Navigation Branch of the Louisville District US Army Corps, which may necessitate a permit. Permittees should anticipate a requirement to notify the Navigation Branch 30 days prior to the commencement of work/mooring on the river, resulting in a Notice to Navigation Interests.	IFA
32	The US Army Corps permit application must include the location, size and work for any staging, borrow and/or waste sites, with a description of work at those locations' areas; temporary work to be performed, including the installation of temporary mats, cofferdams, etc.	IFA
33	The US Army Corps permit issued for this project would require the contractor to notify the Corps if potential endangered species or historic/archeological resources are encountered during the course of work.	IFA
34	The US Army Corps must be notified of any modifications to the authorized work.	IFA
35	The US Army Corps will require either a U.S. Coast Guard (USCG) permit or correspondence from the USCG stating a permit is not required prior to issuance of any Corps permits.	IFA
36	Design-Build Contractor shall notify IFA in writing within 24 hours of inadvertent impacts to wetlands or waterways for which activities are not permitted. Inadvertent impacted areas shall be immediately restored to the full satisfaction of IFA and the appropriate Governmental Entities. Except as specifically provided otherwise in the PPA, the cost incurred for, and the delay to the Project Schedule resulting from, restoration and, as applicable, mitigation of any inadvertent impacted areas shall be the sole responsibility of the Design-Build Contractor.	Design-Build Contractor
37	Design-Build Contractor shall coordinate with the INDOT Environmental Services Division and KYTC Division of Environmental Analysis regarding temporary impacts to waterway, wetland and other water resources.	Design-Build Contractor

ATTACHMENT 7-2

UNIQUE SPECIAL PROVISION

PROVISONS FOR LEAD-BASED PAINT

Description

HANDLING, TESTING, AND DISPOSING OF EXISTING CONCRETE BRIDGE DECK, CLEANING TOP FLANGE OF STEEL STRUCTURAL MEMBERS, AND BRIDGE PAINTING SPECIFICATION REVISIONS

Test Method

One shovel full of material shall be taken from three random locations within the crushed concrete waste pile. The sample shall consist of varying sizes of material. The material shall be placed in a 5 gallon bucket. The contents of the bucket shall then be dumped over a No. 4 sieve into another 5 gallon bucket. All material that passes the No. 4 sieve shall be placed in a quart or gallon size plastic bag with a zipper seal and labeled as to which bridge the sample represents. If the material that passes the No. 4 sieve amounts to less than a handful, all of the material that was retained on the No. 4 sieve shall be crushed with a sledge hammer or other suitable device until sufficient material is generated that passes the No. 4 sieve. The Engineer will send the sample to the laboratory for testing. The waste residue sample are required to be tested for arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver by the TCLP in accordance with 40 CFR 261.24. If any of these contaminants are present in a concentration which exceeds the respective regulatory level indicated in Table 1 of 40 CFR 261.24, the entire crushed concrete waste pile shall be considered hazardous and disposed of accordingly. The waste residue sample is also required to be tested for eight Total Metals consisting of: arsenic, barium, cadmium, chromium, lead, selenium, and silver by the EPA SW-846-method 6010, and mercury by the EPA SW-846-method 7471.

The 2020 Standard Specifications are revised as follows:

SECTION 202, BEGIN LINE 92, INSERT AS FOLLOWS:

202.03 Removal of Bridges, Culverts, and Other Drainage Structures

Bridges, culverts, and other drainage structures in use by traffic shall not be removed in whole or in part until satisfactory arrangements have been made to accommodate traffic. Any excavation adjacent to the structure or to its approaches shall be shored adequately to avoid damage to them or to traffic.

When a reinforced concrete arch bridge is to be removed, either in whole or in part, the work shall include the removal of miscellaneous items within the limits of the structure, which must be removed prior to or in conjunction with the removal of the structure. These miscellaneous items shall include but shall not be limited to: concrete and asphalt pavements; concrete and asphalt sidewalks; and fill within the arches regardless of content.

For all painted or coated structural steel including beams, girders, diaphragms, cross frames, plates, and all other structural steel items that become the property of the Contractor through either a complete bridge removal in accordance with 202.03(a) or the removal of portions of a bridge in accordance with 202.03(b), the Contractor shall either:

1. *take the steel to a recycling facility for proper disposal, or*

2. *take ownership of the steel.*

For structures shown in the contract documents as being built before 1995, the Contractor shall assume that the existing coating contains hazardous materials and that mill scale exists on the steel.

If the Contractor elects to take the steel to a recycling facility, a receipt from the facility shall be provided. The receipt from the recycling facility shall show the name of the facility that accepted the material, address, city, state, zip code, contract number, bridge number, date material was received from the Contractor, weight of the material accepted by the recycling facility, and detailed description of the items given to the recycling facility.

If the Contractor elects to take ownership of the steel, the steel shall be cleaned in accordance with 619.14 prior to its removal from the project.

SECTION 202, AFTER LINE 167, INSERT AS FOLLOWS:

When a reinforced concrete bridge deck is to be removed, either in whole or in part, from a steel superstructure, portions of the existing coating and rust from the top flange of the steel superstructure adhere to the bottom of the concrete bridge deck. A random sample of the concrete, coating, and rust waste stream shall be obtained and tested in order to characterize the waste stream. The sampling process depends on the Contractor's method of concrete removal and shall be in accordance with one of the following. If the Contractor chooses to use both methods to remove a reinforced concrete bridge deck, either in whole or in part, then separate piles of concrete debris shall be maintained and sampled as directed in 1. and 2. below.

1. Bridge Deck Removal in Slabs

If the Contractor elects to remove the existing bridge deck or portions thereof by saw cutting the concrete bridge deck slab into smaller slab pieces, the concrete slabs shall be stored on Department right-of-way until the waste stream has been characterized.

Any existing coating and rust that adheres to the underside of the concrete slabs shall be removed by any of the mechanical surface preparation methods listed in SSPC-SP13. Removal efforts shall continue until all remnants of existing coating and rust have been removed from the concrete. Containment in accordance with 619.07(b)1.a shall be used. The waste reside stream from removing the existing coating and rust from the concrete shall be commingled with the waste residue stream from cleaning the top of the steel structural member, which was generated as a result of 619.18.

The waste residue sample from the combined coating and rust waste stream and the top of the top flange waste stream shall be sampled in accordance with 3a below. Concrete shall be disposed of in accordance with 202.03(c).

2. Bridge Deck Removal in Chunks

If the Contractor elects to remove the existing bridge deck or portions thereof in chunks by breaking with hydraulic hammers, by crushing, or by any other means that results in concrete chunks being generated from the bridge deck removal operation, all concrete waste shall be stored on the Department's right-of-way until this waste stream has been characterized.

3. Sampling Procedure

For concrete generated from removal methods 1 and 2 above, the Engineer will witness the extraction of the waste residue sample. The Department will maintain custody of the waste residue

sample until it is shipped. The sample shall be analyzed for all contaminants listed in ITM 803 by the TCLP and Total Metals. All remaining waste residue shall be placed in an approved container. Such containers shall be labeled and maintained to comply with 40 CFR 264.

a. For Waste Streams in accordance with 202.03(b)1

The waste residue sample shall be taken by random method as described in the QCP which reflects representation of the entire bridge. The waste stream consisting of paint, rust, existing structural steel coating, fine concrete particles, and all other items related to the removal of the residue from the concrete and steel shall be disposed of as described in 202.03(c).

b. For Waste Streams in accordance with 202.03(b)2

A random sample of the crushed concrete shall be obtained by following the procedure in the Test Method of this USP. If the waste characterization of the crushed concrete bridge deck waste stream is hazardous and matches the waste characterization of the waste stream from the top of the steel structural members for that bridge, the waste streams may be commingled and disposed of as one in an appropriate disposal facility as described in 202.03(c). If the waste characterizations are different or are non-hazardous, then each waste stream shall remain separate. The waste stream from the top of the top flange of the steel structural members shall be disposed of in accordance with 619.07(b). The crushed concrete waste stream shall be disposed of as described in 202.03(c).

(c) Disposal of Concrete

All concrete from complete or partial removals, which is determined to be acceptable for riprap, shall be used on the project as directed. Concrete which has paint or other coatings adhering to it or exposed reinforcing bars shall not be used for riprap. Disposal or placement as riprap will not be paid for directly, but the cost thereof shall be included in the cost of removal. ~~Disposal of concrete from complete or partial removals shall be in accordance with 203.08.~~

If hazardous materials equal to or exceeding the established threshold in 40 CFR 261.24 Table 1 are present, disposal of the reinforced concrete bridge deck shall be in accordance with SSPC-Guide 7 and 619.07(b). If hazardous materials are not above the established threshold in 40 CFR 261.24, the reinforced concrete bridge deck shall be disposed of in accordance with 203.08. The paint, rust, and cleaning debris from cleaning paint from the concrete shall be disposed of in accordance with 619.07(b) and will be paid as disposal of cleaning waste in accordance with 619.20. Crushed concrete or post-hydrodemolition concrete shall not be disposed of in a clean fill facility.

SECTION 202, BEGIN LINE 519, INSERT AS FOLLOWS:

Removal of present structure or portions thereof will not be measured for payment.

For steel that the Contractor elects to take to a recycling facility, handling, hauling, and all other activities involved with removing and properly disposing of existing steel at a recycling facility will not be measured for payment.

For steel that will become the property of the Contractor, required cleaning of existing steel, removal of mill scale, testing, disposal of the waste stream, containment, and all other items involved with removing and properly disposing of the existing coating will not be measured for payment.

Pavement removal will be measured by the square yard of the area removed.

Sampling, laboratory costs, and all other expenses associated with determining whether or not the reinforced concrete bridge deck must be disposed of in a disposal facility that accepts hazardous waste, a standard construction debris facility, or a clean fill facility will not be measured for payment. The method of removal of the existing paint, rust, and structural steel coating from the concrete and the disposal of this waste will not be measured for payment.

Cleaning of the structural steel on a bridge superstructure to be removed will not be measured for payment.

SECTION 202, AFTER LINE 614, INSERT AS FOLLOWS:

The cost of transportation and disposal of spent materials, waste residues, waste residue containers, and all other debris generated from environmental control and cleaning the paint and rust from the concrete that gets disposed of shall be paid for when the Contractor provides a paid invoice showing at what facility the disposal occurred. Payment will be made for disposal of cleaning waste in accordance with 619.20.

SECTION 202, AFTER LINE 666, INSERT AS FOLLOWS:

The cost of sampling, laboratory costs, and all other expenses associated with determining whether or not the reinforced concrete bridge deck must be disposed of in a disposal facility that accepts hazardous waste, a standard construction debris facility, or a clean fill facility shall be included in the present structure remove or present structure remove portions pay item. All costs associated with removing existing paint, rust, and structural steel coating from the existing concrete shall be included in the cost of the present structure remove or present structure remove portions pay item.

Where the existing structural steel is shown to be removed and becomes the property of the Contractor, the cost of the following: removal of mill scale, furnishing all materials, equipment, and labor required for scraping, steel brushing, or other acceptable methods for complete removal of the existing coating on all areas of the structural steel to the level of cleanliness specified in 619.14, performing the quality control tasks outlined in 619.03, testing, use of special cleaning methods, and shipping of waste residue samples, shall be included in either the present structure remove, or present structure remove portion pay item for the respective bridge number.

SECTION 202, BEGIN LINE 749, INSERT AS FOLLOWS:

The cost of all handling of the product, removal of the product from the tank, disposal, all required packaging, and transportation shall be included in the cost of underground storage tank, liquid waste disposal.

All necessary cleanup of spills caused by the Contractor will not be paid for.

For steel that the Contractor elects to take to a recycling facility, the cost of handling, hauling, and all other costs involved with removing and properly disposing of existing steel at a recycling facility shall be included in the cost of present structure remove, or present structure remove, portions pay item. The Department will withhold a payment equal to 50% of the present structure remove, or present structure remove, portions pay item until the Contractor presents a

receipt from the recycling facility indicating that the recycling facility is now in possession of the steel.

For steel that will become the property of the Contractor, the cost of cleaning existing steel, removal of mill scale, testing, disposal of the waste stream, containment, and all other costs involved with removing and properly disposing of the existing coating shall be included in the cost of present structure remove, or present structure remove, portions pay item. The Department will withhold payment of 50% of the present structure remove, or present structure remove, portions pay item until the Contractor presents a receipt from the facility where the waste stream disposal occurred.

SECTION 619, BEGIN LINE 3, DELETE AND INSERT AS FOLLOWS:

619.01 Description

This work shall consist of preparing surfaces, disposing of waste residue, and applying paint *or another coating* to steel bridges*, steel piling, bearing assemblies, or other steel items* in accordance with 105.03.

MATERIALS

619.02 Materials

Materials shall be in accordance with the following:

Epoxy Intermediate Paint	909.02(b)
Finish Coat for Weathering Steel	909.02(e)
Multi-Component Inorganic Zinc Silicate Primer	909.02(a)1
Organic Zinc Primer	909.02(a)2
Polyurethane Finish Coat	909.02(c)
Structural Steel Coating Systems	909.03
Waterborne Finish Paint	909.02(d)

~~Material s~~*S*afety data sheets shall be provided in the QCP for all materials to be delivered to the project site.

SECTION 619, BEGIN LINE 32, DELETE AND INSERT AS FOLLOWS:

619.03 Quality Control and Quality Assurance

The Contractor shall be responsible for the quality of work on the contract and shall ensure that all work has been performed by accepted quality control methods. A QCP shall be prepared and submitted by the Contractor in accordance with ITM 803. No work may begin until written notice has been received that the QCP was accepted by the Engineer. The QC manager shall furnish the current referenced SSPC Standards at the project site.

Cleaning and painting shall be done by a Contractor certified as SSPC-QP 2 for cleaning and painting existing bridge steel on steel ~~bridges constructed~~*structures shown in the contract documents as being built* before 1995~~, regardless of whether the existing coating is advertised as non-hazardous based or hazardous based~~. Cleaning and painting shall be done by a Contractor that at a minimum is certified as SSPC-QP 1 for cleaning and painting new bridge steel or for cleaning and painting existing bridge steel on steel ~~bridges constructed~~*strucutres shown in the contract documents as being built* after 1994.

SECTION 619, BEGIN LINE 87, DELETE AND INSERT AS FOLLOWS:

619.04 Prosecution of Work

Prosecution of work shall be in accordance with the applicable requirements of ~~108.03~~*108.04*.

SECTION 619, BEGIN LINE 128, DELETE AND INSERT AS FOLLOWS:

619.07 ~~Environmental and~~ Safety *and Environmental* Requirements

~~P~~*Safety requirements, p*ollution control, and ~~waste~~ disposal of existing paint residue and debris shall be in accordance with the following requirements.

(a) Safety Requirements

The containment system shall be in accordance with 619.07(b)1a or 619.07(b)1b, as applicable, based on the year the structure was built as shown in the contract.

~~Workers shall be protected in accordance with IOSHA requirements~~*The Contractor shall follow OSHA rules and regulations and be responsible for determining the level of hazards that are present in the containment during the removal of the existing bridge coating operation. Once the Contractor establishes the level of hazard present, the Contractor shall be responsible for furnishing personal protective equipment to provide the degree of protection necessary for the established level of hazard.* All *Contractor and Department* personnel on the project site shall wear personal protective equipment to the level *of hazard* as determined by the sampling and monitoring requirements *performed by the Contractor*. The protective equipment shall be furnished by the Contractor, including to Department personnel. Training shall be given to all personnel *who are* provided with ~~the~~*personal* protective equipment. P*ersonal p*rotective equipment shall include, but not be limited to, clean air supplied respirators, air purifying respirators, conventional hood*s* as applicable, eye protection, and protective clothing. ~~Two rooms for changing and washing shall be provided on bridges containing hazardous-based coatings.~~

(~~a~~*b*) Pollution Control

Pollution control shall consist of two different operations. One shall be controlling and containing the atmosphere generated during the coating removal operation. The other shall be controlling and containing the solid waste stream generated as a result of the coating removal operation.

1. ~~Containment for Advertised Non-Hazardous Sites~~*Pollution Control During Existing Coating Removal Operations*

~~Blasting materials, scrapings, wire brushings, and paint particles shall be contained in accordance with SSPC-Guide 6, Class 2A with method A, level 2 emissions, specifically for non-hazardous primed bridges~~*During existing coating removal operations, the Contractor shall recognize that the environment created by removal of the existing coating from the structure may create an atmosphere in which hazards to personnel on the jobsite are likely to be generated, and thus the Contractor shall be responsible for controlling and protecting the exposure of all workers and the surrounding environment from the hazards.*

The characterization of the level of hazard of the existing coating that the Department considers to be present on the structure will be dictated by the year the structure was built as indicated in a. or b. below. The characterization of the level of hazard of the existing coating is not related to the results of the TCLP.

a. Containment for Structures Built Before 1995

For structures shown in the contract documents as being built before 1995, the Contractor shall provide a containment system in order to contain all blasting materials, scrapings, wire brushings, and paint particles in accordance with SSPC-Guide 6, Class 2A or greater with method A, level 1 emission control capability. The Contractor shall take samples and monitor the work environment in accordance with IOSHA requirements and shall provide personal protective equipment appropriate to the conditions present within the work environment.

b. Containment for Structures Built After 1994

For structures shown in the contract documents as being built after 1994, the Contractor shall provide a containment system in order to contain all blasting materials, scrapings, wire brushings, and paint particles in accordance with SSPC-Guide 6, Class 2A or greater with method A, level 3 emission control capability. The Contractor shall take samples and monitor the work environment in accordance with IOSHA requirements and shall provide personal protective equipment appropriate to the conditions present within the work environment.

~~**2. Containment for Advertised Hazardous Sites**~~

~~Blasting materials, scrapings, wire brushings, and paint particles shall be contained in accordance with SSPC-Guide 6, Class 2A or better with method A, level 0 emissions, for hazardous primed bridges.~~

Regardless of the level of containment as listed above, if a spill, as defined in IDEM Regulation 327 IAC 2-6.1 does occur, all work shall stop and immediate action shall be taken to clean up the site. Spills of material, that enter or threaten to enter the water, shall be handled in accordance with IDEM Regulation 327 IAC 2-6.1. The IDEM Emergency Response Branch, the local health department, and all water intake users within 500 ft of the bridge shall be immediately contacted and advised of the spill. Written documentation of all such contacts and actions shall be kept. All applicable Federal, State, and local rules and regulations described in ~~619.07(b)1~~*619.07(b)2b(1)* shall be observed.

2. Pollution Control of the Generated Waste Stream

~~3~~*a*. Waste Stream Sampling

Each bridge shall generate a separate waste stream and shall not be commingled with other materials. The sample of waste residue from the bridge shall be obtained at the conclusion of the first day of the *coating* removal operation for that bridge. The sample will be shipped to be tested within 24 h in a manner agreed to by the Department and as described in the QCP. The Engineer will witness the extraction of the waste residue sample. The Department will maintain custody of the waste residue sample until it is shipped. The waste residue sample shall be taken by random method as described in the QCP which reflects representation of the entire bridge. The samples shall be analyzed for all contaminants listed in ITM 803 by the TCLP. All remaining waste residue shall be placed in an approved container. Such containers shall be labeled and maintained to comply with 40 CFR 264.

No waste shall remain on the booms or on any water surface overnight. All blasting debris shall be cleaned up after each day's work. All waste material shall be properly stored at the project site to prevent loss or pollution.

If the waste stream sample analysis is returned with one or more of the contaminants meeting or exceeding the regulatory level for the respective contaminant, the entire waste stream

for that bridge shall be considered to exhibit the characteristic of toxicity and thus shall be characterized as and considered to be hazardous.

If the waste stream sample characterization is returned with none of the contaminants meeting or exceeding the regulatory level for the respective contaminant, the entire waste stream for that bridge shall be considered to not exhibit the characteristic of toxicity and thus shall be characterized as and considered to be non-hazardous.

The characterization of the waste stream as either hazardous or non-hazardous for disposal shall be based only on the results of the TCLP. The results of the TCLP do not dictate the level of the containment system required in accordance with 619.07(b)1.

If hazardous materials are found *to be present* in the waste residue sample of ~~an advertised, non-hazardous site, the Contractor shall immediately stop all cleaning and painting operations on that bridge~~*a ~~bridge~~structure shown ~~on the plans~~ in the contract documents as being built after 1994~~as having non-hazardous coatings~~*, ~~T~~*t*he Contractor shall *immediately* notify the Engineer that hazardous materials have been found and, if not addressed in the QCP, the Contractor shall submit revisions to the QCP that detail the necessary changes due to the presence of hazardous materials. The Contractor shall not return to work until the revised QCP is approved in writing.

~~(b)~~*b.* Waste Disposal

Regardless of the waste characterization obtained from the waste sample, disposal of existing paint and debris shall be in accordance with SSPC-Guide 7 and the following requirements.

~~1.~~*(1)* Laws to be Observed

Federal and State laws and regulations regulate the disposal of bridge painting debris. Bridge paint debris shall be manifested or certified and shall be disposed of at an appropriate disposal facility.

The Contractor shall have direct knowledge regarding compliance with laws pertaining to pollution control and waste management such as, *but not limited to,* the following.

a. subtitle C of the RCRA, 40 CFR 261, 262, 263, 265, and 268;

b. the Solid Waste Rule, 329 IAC 10;

c. the Hazardous Waste Rule, 329 IAC 3.1;

d. the Air Pollution Rule 329 IAC 6-4;

e. the Water Pollution Rule, 327 IAC 2-6.1;

f. the United States Department of Transportation regulations 49 CFR 172.300; and

g. OSHA worker safety regulations 29 CFR 1926.

~~2.~~*(2)* Time Limitations

The maximum time limit from the date the generated waste is placed in a container and the date the material is transported to a permitted treatment, storage, and disposal facility shall be 90 calendar days.

~~3.~~*(3)* Marking of Spent Material Containers

Spent material containers shall be marked with the date that waste residue is first placed in the container. Until laboratory results *described in 619.07(b)2a* are received concerning the category of the waste residue, the containers shall be labeled "LEAD PAINT WASTE DEBRIS" or "ZINC PAINT WASTE DEBRIS", as appropriate. The labeling shall include the contract number, bridge number, sample number, and sample date. Labeling of containers as hazardous waste will not be required until the appropriate laboratory analysis determines the waste residue to be hazardous in accordance with the current RCRA hazardous waste definitions. Immediately upon notice that the waste residue is hazardous, the containers shall be marked in accordance with 49 CFR 172, Subpart D.

~~4.~~*(4)* Instruction for Disposal of Paint Waste Residue

~~Sampling and analysis of the paint waste residue shall be performed to determine if the wastes are hazardous. If the waste residue is not found to be hazardous in accordance with current RCRA hazardous waste definitions, the waste residue material shall be disposed of at an appropriate disposal facility.~~ If the waste residue is found to be hazardous, ~~IDEM will be notified and~~ *the Engineer will obtain* an EPA identification number ~~will be obtained~~*from IDEM*. This number will be provided to the Contractor within 30 days of the start of waste generation for bridges having hazardous waste paint debris. The waste residue from different bridges shall not be commingled. The Contractor shall have the following responsibilities:

a. determining the location for disposal, treatment, or recycling of the waste residue, obtaining the Engineer's approval of the site, and arranging with the approved site for acceptance of the materials;

b. preparing a hazardous waste manifest, as required by Federal and State requirements, for signature;

c. scheduling the shipment of waste residue to the permitted disposal site;

d. ensuring that the hazardous waste manifest is carried in the transportation vehicle;

e. ensuring that all required hazardous materials placards are properly displayed on the vehicle;

f. ensuring prompt movement of the vehicle to the disposal site; and

g. returning one copy of signed manifest documents to the Engineer. A copy of the chemical and physical analysis of the waste, all deposit receipts, manifests, and required paperwork for disposal shall be given to the Engineer, and all waste residues disposed of before the ~~contract~~*waste disposal item* will be ~~accepted~~*paid*.

If the waste residue is found to be non-hazardous in accordance with current RCRA hazardous waste definitions, the waste residue material shall be disposed of at an appropriate disposal facility.

~~5.~~*(5)* Instructions for Disposal of Other Project Generated Waste

~~The o~~*O*ther wastes that may be generated on the project include, but are not limited to, spent solvents from cleaning of equipment and empty or partially empty containers of paint, paint thinners, spent abrasives, and solvents. The Contractor shall recycle or dispose of all project generated waste materials.

If the waste is defined as a hazardous waste in accordance with the current RCRA definitions, the waste shall be recycled or disposed of in accordance with ~~619.07(b)4~~*619.07(b)2b(4)*. All project generated waste and the method of recycling or disposal shall be identified in the QCP.

619.08 Surface Preparation *of Concrete and Steel*

The tops of all concrete and steel pier caps, concrete abutment caps, and 2 ft down all sides of concrete pier and abutment caps shall be washed. The washing shall be accomplished by means of a pressure washer with potable water. The pressure shall be between 800 and 1,500 psi. If detergents or other additives are added to the water, the surface shall be rinsed with potable water before the detergents dry.

Cleaning of steel surfaces shall be performed by an SSPC certified contractor. This requirement will not apply to the following:

(a) shop cleaning; *or*

(b) sections of beams or other structural members less than 180 sq ft of total area to be painted for the contract where heat-straightening or similar repairs have taken place.

Surfaces to be painted shall be cleaned in accordance with the SSPC classification, unless otherwise specified. Compressed air shall pass through an oil and water extractor before entering another apparatus.

~~Pressure washing in accordance with 619.08(a) and s~~*S*olvent cleaning in accordance with 619.08(~~b~~*a*) shall be performed to remove all oils, soluble salts, visible grease, and any other surface contaminants before all other cleaning methods are started.

SECTION 619, BEGIN LINE 327, DELETE AND INSERT AS FOLLOWS:

For ~~bridges~~structures shown on the contract documents as being built before 1995, the Contractor shall assume that mill scale is present on the existing steel. All mill scale shall be removed as a part of the cleaning operations.

~~**(a) Pressure Washing**~~

~~All surfaces to be painted and the tops of pier and abutment caps shall be washed. The washing shall be accomplished by means of a low pressure power water washer with potable water. The pressure shall be between 800 and 1,500 psi. If detergents or other additives are added to the water, the surface shall be rinsed with potable water before the detergents dry. All washed surfaces shall be completely free of all oils and soluble salts. The Contractor shall obtain the hold point release for pressure washing prior to beginning other surface preparation activities.~~

(~~b~~*a*) Solvent Cleaning

~~After the hold point for pressure washing cleaning has been released, s~~*S*olvent cleaning shall be performed in accordance with SSPC-SP1.

After the hold point for solvent cleaning has been released, one or more of the following cleaning methods shall be performed.

(~~c~~*b*) Hand Tool Cleaning

Hand tool cleaning shall be in accordance with SSPC-SP2.

(~~d~~*c*) Brush-Off Blast Cleaning

Brush-off blast cleaning shall be in accordance with SSPC-SP7/NACE No. 4.

(~~e~~*d*) Commercial Blast Cleaning

Commercial blast cleaning shall be in accordance with SSPC-SP 6/NACE No. 3.

(~~f~~*e*) Near-White Blast Cleaning

Near-white blast cleaning shall be in accordance with SSPC-SP 10/NACE No. 2.

(g*f*) White Metal Blast Cleaning

White metal blast cleaning shall be in accordance with SSPC-SP 5/NACE No. 1.

(~~h~~*g*) Power Tool Cleaning

Power tool cleaning shall be in accordance with SSPC-SP 3.

(~~i~~*h*) Commercial Grade Power Tool Cleaning

Commercial grade power tool cleaning shall be in accordance with SSPC-SP 15.

(~~j~~*i*) Power Tool Cleaning to Bare Metal

Power tool cleaning to bare metal shall be in accordance with SSPC-SP 11.

All areas within 5 ft on both sides of a bridge deck joint as well as all areas of significant pitting shall be cleaned twice using the same method used for the original cleaning, excluding solvent cleaning.

SECTION 619, SECTION 545, DELETE AND INSERT AS FOLLOWS:

(a) Non-Weathering Steel

All structural steel shall be cleaned in accordance with 619.08(~~f~~*e*).

All structural steel shall receive an inorganic zinc primer, including faying surfaces of high strength bolted connections and areas in contact with concrete. Surfaces, other than the contact surfaces described above, which are inaccessible after erection shall be painted in the shop with the full paint system required on the completed bridge.

(b) Weathering Steel

All structural steel shall be left unpainted, except as shown on the plans. All diaphragms, stiffeners, and other appurtenances located within the limits shown on the plans shall be included in the painting area. Surfaces to be painted shall be cleaned in accordance with 619.08(~~f~~*e*). Surfaces

shall be painted in accordance with 619.09(a), except the finish coat shall be in accordance with 909.02(e).

619.12 Field Painting New Steel Bridge

All structural steel surfaces which are accessible after final erection shall be painted with the remaining coatings specified for structural steel paint system in accordance with 619.09(a) in the field after final erection.

If application of inorganic zinc primer on a steel surface is not performed in the shop before erection of the bridge, the surfaces which are exposed shall be cleaned in accordance with 619.08(a)~~, 619.08(b),~~ and 619.08(~~f~~*e*). These surfaces shall then be painted with the structural steel paint system after final erection.

Surface areas where the inorganic zinc primer was damaged during shipping, handling, and erection shall be cleaned in accordance with 619.08(a)~~, 619.08(b),~~ and either 619.08(~~e~~*d*) or 619.08(~~j~~*i*). Likewise, all bolt and field connections shall be cleaned in the same manner. All the damaged areas, and bolt and field connections shall then be painted with the inorganic zinc primer applied in the shop. This requirement will not apply to temporary steel bridges.

Where steel surfaces have been painted with the full paint system and the paint coatings have been damaged, the affected steel surface areas shall be cleaned in accordance with 619.08(~~j~~*i*). Structural steel paint system shall then be re-applied.

For weathering steel girders, caulk shall be applied to act as a drip bead as shown in the plans.

619.13 Painting Existing Steel Bridges

The surfaces to be cleaned and painted shall include the surfaces of all steel members of the superstructure, substructure, floor beams, stringers, plates, castings, bearing assemblies, ornamental handrails, lattice work, and other steel appurtenances. When shear connectors have been specified, the top of the top flange shall not be painted.

If the contract specifies clean steel bridge, the bridge steel shall be cleaned in accordance with 619.08(a)~~, 619.08(b),~~ and either 619.08(~~e~~*d*) or 619.08(~~j~~*i*). The structural steel paint system in accordance with 619.09(a) shall be used for painting.

If the contract specifies clean steel bridge, partial, the bridge steel shall be cleaned in accordance with 619.08(a)~~, 619.08(b),~~ and either 619.08(~~e~~*d*), or 619.08(h)~~, or 619.08(j)~~. The partial paint system in accordance with 619.09(b) shall be then used for painting.

619.14 Handling of Steel Bridge Superstructure to be Removed

If the Contractor elects to take ownership of the steel in accordance with 202.03, a QCP shall be submitted in accordance with 619.03. The entire surface area of the steel shall be cleaned in accordance with 619.08(d) prior to the steel leaving the construction limits and becoming the property of the Contractor. Mill scale shall be assumed to be present on the existing steel. Cleaning in accordance with 619.08(a) shall not be performed. A level of containment in accordance with 619.07(a) shall be used.

Testing and disposal of the waste stream produced by this cleaning shall be in accordance with 619.07.

619.14*5* Drain Castings Treatment

Roadway drain castings located in a bridge deck shall be satisfactorily cleaned in accordance with 619.08(~~d~~*c*) or 619.08(~~h~~*g*). The castings shall not be shot-blasted.

The roadway drain castings shall be painted with a black finish coat in accordance with 909.02(c).

If a roadway drain casting extension pipe is damaged or missing, it shall be replaced. The extension pipe shall be in accordance with 715.

619.16 Clean and Paint Bearing Assemblies

When shown on the plans or a pay item is included in the schedule of pay items, all bearing assemblies including top and bottom plates of each assembly shall be cleaned in accordance with 619.08(a) and 619.08(d). Pollution control shall be in accordance with 619.07.

If the pay item clean and paint bearing assemblies is listed in the schedule of pay items for a particular structure, the entire bearing assembly shall be painted with the structural steel paint system in accordance with 619.09(a).

If the pay item, paint steel bridge, or paint steel bridge, partial, is listed in the schedule of pay items for a particular structure, the entire bearing assembly shall be painted with the structural steel paint system that is being used on the rest of the bridge.

619.16.1 Clean and Paint Steel Piling

All exposed steel piling shall be cleaned in accordance with 619.08(a) and either 619.08(d) or 619.08(i). The structural steel paint system in accordance with 619.09(a) shall be applied. The color of the top coat shall be SAE-AMS-STD-595, color no. 13711, buff.

619.~~15~~*17* Responsibility for Damage

Unless otherwise specified by the Engineer in writing, full containment shall be provided when performing the surface preparation operation and when applying all coats of paint, except primer coats, with spray equipment. All persons and property shall be protected from damage or injury from the surface preparation operations and painting operations by providing containment as described in the QCP. Persons and property shall include, but not be limited to, pedestrians, vehicles, and other traffic upon or underneath a bridge, all portions of the bridge superstructure and substructure, and all adjacent property. The Contractor shall be responsible for damages in accordance with 107.17.

619.~~16~~*18* ~~Blank~~*Top of Top Flange of Steel Structural Members*

When shown on the plans or a pay item is included in the schedule of pay items, the top of the top flange of steel structural members shall be cleaned in accordance with 619.08 by a contractor certified as SSPC-QP 2. The Contractor shall assume the existing coating on the top of the top flange contains hazardous materials and mill scale, and shall use pollution control and containment in accordance with 619.07(b)1. A QCP shall be prepared and submitted in accordance with 619.03. The steel shall be cleaned to a level of cleanliness in accordance with 619.08(d) or 619.08(h), however solvent cleaning in accordance with 619.08(a) shall not be performed.

Each bridge shall generate a separate waste stream and shall not be commingled with other materials. The waste stream shall be sampled in accordance with 619.07 and all other requirements of 619.07 shall be followed. Once the result from the waste stream sampling is known

and the waste stream is appropriately characterized as hazardous or non-hazardous, all waste shall be disposed of in accordance with 619.07(b).

619.~~17~~*19* Method of Measurement

Cleaning and painting ~~will not be measured for payment~~*of steel structural members*, *cleaning the top of the top flange of steel structural members, cleaning and painting of bearing assemblies, and cleaning and painting of steel piling will not be measured for payment. Cleaning areas around bridge joints and other areas with significant pitting a second time will not be measured for payment.* Disposal of the waste stream generated by the cleaning operation will not be measured for payment.

Cleaning roadway drain castings, caulking joints of lapping members, and caulking on weathering steel will not be measured for payment.

For steel that will become the property of the Contractor, cleaning existing steel, removal of mill scale, testing, disposal of the waste stream, containment, and all other items involved with removing and properly disposing of the existing coating will not be measured as per 202.13.

If a ~~bridge is advertised~~*structure is shown in the contract documents* as *being built before 1995* ~~having existing hazardous materials~~, no measurement will be made of the area covered by mill scale. ~~For bridges advertised as having existing non-hazardous materials~~*Otherwise*, the area of structural steel covered by mill scale will be measured for payment after a proper cleaning of the entire containment area or an agreed large portion thereof and removing all other existing materials, including all paint and rust. The percentage of the area of structural steel covered by existing mill scale will be representative of this entire area. The pre-established remedies for this changed condition apply in accordance with 104.02(d) and ~~619.18~~*619.20*.

Roadway drain casting extension pipe will be measured in accordance with 715.13.

The estimated weight, length, number of steel spans, surface area of steel, and type of primer shown on the plans or in the Proposal book is incidental information. Such information is approximate only. The Department will not guarantee its accuracy.

619.~~18~~*20* Basis of Payment

Existing steel bridges to be cleaned, or partially cleaned, whichever is specified, will be paid for at the contract lump sum price for clean steel bridge or clean steel bridge, partial, at the bridge number specified. *Cleaning the top of the top flange of existing steel bridges will be paid for at the contract lump sum price for clean steel bridge, top flange, at the bridge number specified.* Existing steel bridges to be painted, or partially painted, whichever is specified, will be paid for at the contract lump sum price for paint steel bridge or paint steel bridge, partial, at the bridge number specified.

When specified as a separate pay item in the contract, cleaning and painting bearing assemblies will be paid for at the contract lump sum price for clean and paint bearing assemblies, at the bridge number specified.

When specified as a separate pay item in the contract, cleaning and painting steel piling will be paid for at the contract lump sum price for clean and paint steel piling, at the bridge number specified.

(a) Pre-Established Remedies for Changed Conditions

1. Discovery of Hazardous Materials but No Mill Scale on a ~~Site Advertised as Non-Hazardous~~*Structure Shown in the Contract Documents as Being Built After 1994*

The payment will be an additional 25% of the clean steel bridge item as computed in 619.~~18~~*20*(b)1 in accordance with 109.05 as payment for all additional costs incurred.

2. Discovery of Mill Scale but No Hazardous Materials on a ~~Site Advertised as Non-Hazardous~~*Structure Shown in the Contract Documents as Being Built After 1994*

If, on a ~~bridge advertised as having existing non-hazardous materials~~*structure shown in the contract documents as being built after 1994* and the presence of hazardous materials has not been confirmed by laboratory analysis, the area of structural steel covered by mill scale comprises greater than ~~15~~*25*% of the area of structural steel in accordance with ~~619.17~~*619.19*, additional compensation for the removal of the mill scale will be made as an adjustment to the clean steel bridge item ~~in accordance with the following:~~. *The adjustment will be an additional payment of 30% of the clean steel bridge item as computed in accordance with 619.20(b)1 will be made.*

~~a. For areas of structural steel greater than 15% and up to and including 25% of the area covered by mill scale, an additional payment of 15% of the clean steel bridge item as computed in accordance with 619. 18 (b) 1 will be made.~~

~~b. For areas of structural steel greater than 25% and up to and including 50% of the area covered by mill scale, an additional payment of 30% of the clean steel bridge item as computed in accordance with 619. 18 (a) 1 will be made.~~

~~c. For areas of structural steel greater than 50% and up to and including 75% of the area covered by mill scale, an additional payment of 45% of the clean steel bridge item as computed in accordance with 619. 18 (b) 1 will be made.~~

~~d. For areas of structural steel greater than 75% of the area covered by mill scale, an additional payment of 60% of the clean steel bridge item as computed in accordance with 619. 18 (b) 1 will be made.~~

3. Discovery of Hazardous Materials and Mill Scale on a ~~Site Advertised as Non-Hazardous~~*Structure Shown in the Contract Documents as Being Built After 1994*

If the laboratory analysis of a waste residue sample on a ~~bridge advertised as having non-hazardous materials~~*structure shown in the contract documents as being built after 1994* yields results indicating the presence of hazardous materials, the entire bridge shall be considered as having mill scale and the following pre-established remedy for this changed condition in accordance with 104.02(d) shall apply. If agreed to in writing between the Contractor and the Department, the work shall proceed with the Contractor assuming all risks for removal of mill scale. An additional 55% of the clean steel bridge item as computed in 619.~~18~~*20*(b)1 in accordance with 109.05 will be paid as additional compensation for the removal and disposal of the hazardous materials, the removal of the mill scale, the additional containment required, and all other incidental items associated with the removal of the hazardous materials and mill scale.

(b) Prices used in Pre-Established Remedies to Changed Conditions

The following prices will be computed and used as the price for the pay item identified

below in all pre-established remedies to changed conditions referenced in this section.

The price for the clean steel bridge item, per bridge, used in all pre-established remedies to changed conditions referenced in this section will be limited to the lesser of the following:

1. 70% of the sum of the clean steel bridge item and paint steel bridge item for that bridge; or

2. the actual amount for the clean steel bridge item for that bridge shown in the Schedule of Pay Items.

Roadway drain casting extension pipe will be paid for in accordance with 715.14.

For steel that will become the property of the Contractor, payment for cleaning existing steel, removal of mill scale, testing, disposal of the waste stream, containment, and all other costs involved with removing and properly disposing of the existing coating will be in accordance with 202.14.

The cost of transportation and disposal of waste materials, waste residues, waste residue containers, and all other debris generated from ~~environmental~~*pollution* control and cleaning that is disposed of will be paid for at the contract lump sum price for disposal of cleaning waste, hazardous or non-hazardous, at the bridge number specified.

Payment will be made under:

Pay Item	**Pay Unit Symbol**
Clean and Paint Bearing Assemblies, Br. No. ____	*LS*
Clean and Paint Steel Piling, Br. No. ____	*LS*
Clean Steel Bridge, Partial, QP- ____, Br. No. ____	LS
Clean Steel Bridge, QP- ____, Br. No. ___	LS
Clean Steel Bridge, Top Flanges, QP-2, Br. No. ____	*LS*
Disposal of Cleaning Waste, _____, Br. No.____ waste type	LS
Paint Steel Bridge, Br. No.____	LS
Paint Steel Bridge, Partial, Br. No.____	LS

The cost to prepare a QCP shall be included in the cost of the pay items of this section. The cost of providing the Department with access to the bridge and seasonal or weather limitations shall be included in the cost of the pay items of this section.

If a ~~bridge is advertised as having existing hazardous materials~~ *structure is shown in the contract documents as being built before 1995*, no additional payment will be made for the removal of mill scale. The cost of the removal of mill scale shall be included in the cost of clean steel bridge ~~or~~, clean steel bridge, partial*, clean and paint bearing assemblies, clean and paint steel piling, or clean steel bridge, top flanges*.

If a ~~bridge is advertised as having existing non-hazardous materials~~*structure is shown in the contract documents as being built after 1994* and the percentage of the area covered by mill scale is less than or equal to ~~15~~*25*% of the total structural steel surface area of a bridge measured in accordance with ~~619.17~~*619.19* no additional payment will be made for the removal of mill scale.

The cost of the removal of mill scale shall be included in the cost of clean steel bridge or clean steel bridge, partial.

The cost of furnishing all materials, equipment, and labor required for ~~washing,~~ solvent cleaning, scraping, steel brushing, or other acceptable methods for removing paint in the locations directed shall be included in the cost of clean steel bridge ~~or~~, clean steel bridge, partial*, clean and paint bearing assemblies, clean and paint steel piling, or clean steel bridge, top flange*. The cost of cleaning roadway drain castings shall be included in the cost of clean steel bridge or clean steel bridge, partial.

The cost of providing containment in accordance with ~~619.15~~*619.07 and 619.17* and personal protective equipment shall be included in the cost of the pay items of this section.

The cost of furnishing all materials, equipment, and labor required to perform the quality control tasks outlined in 619.03 shall be included in the cost of clean steel bridge or*,* clean steel bridge, partial, *clean and paint bearing assemblies, clean and paint steel piling, or clean steel bridge, top flange.*

The cost of furnishing all materials including caulk, equipment, and labor to perform caulking and painting, including the stripe coats, with the structural steel paint system or the partial paint system shall be included in the cost of paint steel bridge or paint steel bridge, partial. The cost of switching stripe coat application methods shall be included in the cost of paint steel bridge or paint steel bridge, partial. The cost of furnishing all materials, equipment, and labor to perform painting of the roadway drain castings shall be included in the cost of paint steel bridge or paint steel bridge, partial.

The cost of all equipment, material, labor, testing, use of special cleaning methods, and shipping of waste residue samples shall be included in the cost of the clean steel bridge or*,* clean steel bridge, partial, *clean and paint bearing assemblies, clean and paint steel piling, or clean steel bridge, top flange, pay item.*

The cost of cleaning areas around bridge joints and other areas with significant pitting a second time shall be included in the clean steel bridge, clean steel bridge, partial, clean and paint bearing assemblies, or clean steel bridge, top flange pay item.

When a pay item is included in the schedule of pay items for clean and paint bearing assemblies, all costs associated with cleaning and painting bearing assemblies, except disposal of cleaning waste, shall be included in the cost of the pay item. If clean steel bridge, clean steel bridge, partial, paint steel bridge, or paint steel bridge, partial are included as pay items in the schedule of pay items, no separate payment will be made for cleaning and painting bearing assemblies on that bridge no. The cost of cleaning and painting bearing assemblies shall be included in the cost of the respective clean steel bridge, clean steel bridge, partial, paint steel bridge, or paint steel bridge, partial pay items for that bridge no.

When a pay item is included in the schedule of pay items for clean and paint steel piling, all costs associated with cleaning and painting steel piling except disposal of cleaning waste shall be included in the cost of the pay item.

ATTACHMENT 8-1 DESIGN CRITERIA

ROUTE OVERVIEW

Project: Sherman Minton Construction Project

Floyd and Clark Counties, Indiana and Jefferson County, Kentucky

Roadway Name	FUNCTIONAL CLASSIFICATION	3R/4R DESIGN CRITERIA	AADT (YEAR)	Design Year AADT (YEAR)	EXISTING # OF LANES	PROPOSED # OF LANES	PROPOSED DESIGN SPEED (MPH)
PR I-64	Interstate	3R	90,000 (2018)	90,000 (2018)	6	N/A	55 (posted) 50 (DS 1960) 45 (DS MOT)
Line A - Spring Street	Minor Arterial	Partial 3R	2,520 (2019)	2,520 (2019)	2-3	N/A	25
Line B - Elm Street	Minor Arterial	Partial 3R	18,930 (2019)	18,930 (2019)	2-3	N/A	25
Line S-1-A - 5th Street	Principal Arterial	Partial 3R	8,840 (2019)	8,840 (2019)	2	N/A	25

I-64 Sherman Minton Construction Project

Route: I-64 EB (Sta. 63+62 to Sta. 115+82 EB Lanes)
I-64 WB (Sta. 61+78 to Sta. 115+71 EB Lanes)

INDOT (des.) # 1702254, 1702260, 1702255, 1592187, 1702259, 1702258, 1702257

	DESIGN ELEMENT	INDIANA DESIGN MANUAL SECTION (2013 - English)	PROJECT-SPECIFIC CRITERIA DEFINITION
DESIGN CONTROLS	Functional Classification	40-1.01	Freeway, 3R (Urban)
	INDOT Geometric Design Table	Ch. 54	Figure 54-2A
	Design Year Traffic, AADT (YEAR)	Fig. 40-2A	90,000 (2018)
	Design Vehicle	Fig. 46-1E	Des: IDV, Min: WB-62
	*Design Speed, mph	Ch. 54-3.01(02)	55 mph (posted) 50 mph (DS in 1960)
	Access Control	Ch. 40-5.0	Full Control
	Level of Service	Ch. 40-2.04	Desirable: B; Minimum: D
CROSS SECTION ELEMENTS	Travel Lane		
	*Width	54-3.03(01)	12 ft
	Surface Type	Ch. 601	Asphalt / Concrete
	Shoulder		
	*Right Width Usable	54-3.03(01)	N/A
	*Right Width Paved	54-3.03(01)	N/A
	*Left Width Paved	54-3.03(01)	4 ft - 7.5 inches
	Surface Type	Ch. 601	Asphalt / Concrete
	Cross Slope		
	*Travel Lane	45-1.01(02)	2%
	Shoulder	45-1.02(05)	N/A
	Auxiliary Lanes		
	*Lane Width	45-1.03	12 ft
	*Shoulder Width	45-1.03	6 ft
	Median Width		
	Depressed	54-3.03(03)	N/A
	Flush, with CMB	54-3.03(03)	N/A
	Clear Zone Width	49-2.01	N/A
	Side Slopes		
	Cut Foreslope	54-3.03(04)	N/A
	Cut Ditch Width	54-3.03(04)	N/A
	Cut Backslope	54-3.03(04)	N/A
	Fill	45-3.01	N/A
	Median Slopes	45-2.02(03)	N/A
BRIDGES	New or Reconstructed Bridges		
	*Structural Capacity	Ch. 403	N/A
	*Clear-Roadway Width	54-5.0	N/A
	Existing Bridges to Remain in Place		
	*Structural Capacity	Ch. 412	HS-20
	*Clear-Roadway Width	54-5.0	42'
	*Vertical Clearance (Freeway Under)		
	New or Replaced Overpassing Bridge	54-5.0	N/A
	Existing Overpassing Bridge	54-5.0	15.1 ft
	Sign Truss/Pedestrian Bridge	54-5.0	N/A
	Vertical Clearance, Freeway over Railroad	402-6.01(03)	N/A
ALIGNMENT ELEMENTS	*Stopping Sight Distance	42-1.0	N/A
	*Minimum Radius	43-2.03	Existing: 1555.54 ft (EB) 1828.59 ft (WB)
	*Superelevation Rate	43-3.0	Existing: 4.6 % (EB) 4.2% (WB)
	*Horizontal Sight Distance	43-4.0	Existing: 333 ft (EB) 361 ft (WB)
	*Vertical Curvature, K-value		
	Crest	44-3.01	N/A
	Sag	44-3.02	N/A
	Vertical Grades		
	*Maximum	54-3.02(02)	3.0%
	Minimum	44-1.03	N/A

* Indicates Level One controlling design criteria. A deviation from such is a design exception, and is subject to approval. See section 40-8.0

I-64 Sherman Minton Construction Project
Route: Spring Street - Line "A"

INDOT (des.) #1701215

	DESIGN ELEMENT	INDIANA DESIGN MANUAL SECTION (2013 - English)	PROJECT-SPECIFIC CRITERIA DEFINITION
DESIGN CONTROLS	**Functional Classification**	40-1.01	Minor Arterial (Built-up), 3R (Partial)
	INDOT Geometric Design Table	Ch. 55	Figure 55-3F
	Design Year Traffic, AADT (YEAR)	Fig. 40-2A	2,520 (2019)
	Design Vehicle	Fig. 46-1E	Des: IDV, Min: WB-50
	***Design Speed, mph**	55-4.01(02)	25 mph
	Access Control	40-5.0	None
	Level of Service	40-2.0	Des: C; Min: D
CROSS SECTION ELEMENTS	**Travel Lane**		
	***Width**	55-4.05(01)	Match Existing
	Surface Type	Ch. 601	Asphalt
	***Curb Offset**	45-1.02	Match Existing
	Shoulder		
	***Usable Width**	55-4.05(02)	N/A
	Surface Type	Ch. 601	N/A
	Cross Slope		
	***Travel Lane**	55-4.05(04)	Match Existing
	Shoulder	55-4.05(04)	N/A
	Auxiliary Lanes		
	Lane Width	45-1.03	N/A
	Curb Offset	45-1.03	N/A
	Shoulder Width	45-1.03	N/A
	Surface Type	Ch. 601	N/A
	TWLTL Width	46-5.02	N/A
	Parking-Lane Width	45-1.04	N/A
	Sidewalk Width	45-1.06	5 ft - 6 ft
	Bicycle-Lane Width	51-7.0	N/A
	Obstruction Free Zone	55-5.02	N/A
	Typical Curbing Type, where used	45-1.05(02)	N/A
	Side Slopes (Uncurbed)		
	Cut Foreslope	55-4.05(09)	N/A
	Cut Ditch Width	55-4.05(09)	N/A
	Cut Backslope	55-4.05(09)	N/A
	Fill	55-4.05(09)	N/A
	Side Slopes (Curbed)		
	Cut Backslope	55-4.05(09)	N/A
	Fill	55-4.05(09)	N/A
BRIDGES	**New or Reconstructed Bridges**		
	***Structural Capacity**	Ch. 403	N/A
	***Clear-Roadway Width**	55-6.03	N/A
	Existing Bridges to Remain in Place		
	***Structural Capacity**	Ch. 403	N/A
	***Clear-Roadway Width**	55-6.02	N/A
	***Vertical Clearance (Freeway Under)**		
	New or Replaced Overpassing Bridge	44-4.0	N/A
	Existing Overpassing Bridge	44-4.0	N/A
	Vertical Clearance, Local over Railroad	402-6.01(03)	N/A
ALIGNMENT ELEMENTS	***Stopping Sight Distance**	55-4.02	N/A
	Decision Sight Distance		
	Avoidance maneuver	42-2.0	N/A
	Stop Maneuver	42-2.0	N/A
	Intersection Sight Distance	55-4.06	N/A
	***Minimum Radius**	55-4.03(01)	N/A
	***Superelevation Rate**	55-4.03(02)	N/A
	***Horizontal Sight Distance**	55-4.03(07)	N/A
	***Vertical Curvature, K-value**		
	Crest	55-4.04(03)	N/A
	Sag	55-4.04(04)	N/A
	Vertical Grades		
	***Maximum**	55-4.04(01)	N/A
	Minimum	44-1.03	N/A

* Indicates Level One controlling design criteria. A deviation from such is a design exception, and is subject to approval. See section 40-8.0

I-64 Sherman Minton Construction Project
Route: Elm Street - Line "B"

INDOT (des.) #1701215

	DESIGN ELEMENT	INDIANA DESIGN MANUAL SECTION (2013 - English)	PROJECT-SPECIFIC CRITERIA DEFINITION
DESIGN CONTROLS	**Functional Classification**	40-1.01	Minor Arterial (Built-up), 3R (Partial)
	INDOT Geometric Design Table	Ch. 55	Figure 55-3F
	Design Year Traffic, AADT (YEAR)	Fig. 40-2A	18,930 (2019)
	Design Vehicle	Fig. 46-1E	Des: IDV, Min: WB-50
	***Design Speed, mph**	55-4.01(02)	25 mph
	Access Control	40-5.0	None
	Level of Service	40-2.0	Des: C; Min: D
CROSS SECTION ELEMENTS	**Travel Lane**		
	***Width**	55-4.05(01)	Match Existing
	Surface Type	Ch. 601	Asphalt
	***Curb Offset**	45-1.02	Match Existing
	Shoulder		
	***Usable Width**	55-4.05(02)	N/A
	Surface Type	Ch. 601	N/A
	Cross Slope		
	***Travel Lane**	55-4.05(04)	Match Existing
	Shoulder	55-4.05(04)	N/A
	Auxiliary Lanes		
	Lane Width	45-1.03	N/A
	Curb Offset	45-1.03	N/A
	Shoulder Width	45-1.03	N/A
	Surface Type	Ch. 601	N/A
	TWLTL Width	46-5.02	N/A
	Parking-Lane Width	45-1.04	N/A
	Sidewalk Width	45-1.06	5 ft - 6 ft
	Bicycle-Lane Width	51-7.0	N/A
	Obstruction Free Zone	55-5.02	N/A
	Typical Curbing Type, where used	45-1.05(02)	N/A
	Side Slopes (Uncurbed)		
	Cut Foreslope	55-4.05(09)	N/A
	Cut Ditch Width	55-4.05(09)	N/A
	Cut Backslope	55-4.05(09)	N/A
	Fill	55-4.05(09)	N/A
	Side Slopes (Curbed)		
	Cut Backslope	55-4.05(09)	N/A
	Fill	55-4.05(09)	N/A
BRIDGES	**New or Reconstructed Bridges**		
	***Structural Capacity**	Ch. 403	N/A
	***Clear-Roadway Width**	55-6.03	N/A
	Existing Bridges to Remain in Place		
	***Structural Capacity**	Ch. 403	N/A
	***Clear-Roadway Width**	55-6.02	N/A
	***Vertical Clearance (Freeway Under)**		
	New or Replaced Overpassing Bridge	44-4.0	N/A
	Existing Overpassing Bridge	44-4.0	N/A
	Vertical Clearance, Local over Railroad	402-6.01(03)	N/A
ALIGNMENT ELEMENTS	***Stopping Sight Distance**	55-4.02	N/A
	Decision Sight Distance		
	Avoidance maneuver	42-2.0	N/A
	Stop Maneuver	42-2.0	N/A
	Intersection Sight Distance	55-4.06	N/A
	***Minimum Radius**	55-4.03(01)	N/A
	***Superelevation Rate**	55-4.03(02)	N/A
	***Horizontal Sight Distance**	55-4.03(07)	N/A
	***Vertical Curvature, K-value**		
	Crest	55-4.04(03)	N/A
	Sag	55-4.04(04)	N/A
	Vertical Grades		
	***Maximum**	55-4.04(01)	N/A
	Minimum	44-1.03	N/A

* Indicates Level One controlling design criteria. A deviation from such is a design exception, and is subject to approval. See section 40-8.0

I-64 Sherman Minton Construction Project
Route: 5th Street - Line S-1-A

INDOT (des.) #1701215

	DESIGN ELEMENT	INDIANA DESIGN MANUAL SECTION (2013 - English)	PROJECT-SPECIFIC CRITERIA DEFINITION
DESIGN CONTROLS	**Functional Classification**	40-1.01	Principal Arterial (Built-up), 3R (Partial)
	INDOT Geometric Design Table	Ch. 55	Figure 55-3F
	Design Year Traffic, AADT (YEAR)	Fig. 40-2A	8,840 (2019)
	Design Vehicle	Fig. 46-1E	Des: IDV, Min: WB-50
	***Design Speed, mph**	55-4.01(02)	25 mph
	Access Control	40-5.0	None
	Level of Service	40-2.0	Des: C; Min: D
CROSS SECTION ELEMENTS	**Travel Lane**		
	***Width**	55-4.05(01)	Match Existing
	Surface Type	Ch. 601	Asphalt
	***Curb Offset**	45-1.02	Match Existing
	Shoulder		
	***Usable Width**	55-4.05(02)	N/A
	Surface Type	Ch. 601	N/A
	Cross Slope		
	***Travel Lane**	55-4.05(04)	Match Existing
	Shoulder	55-4.05(04)	N/A
	Auxiliary Lanes		
	Lane Width	45-1.03	N/A
	Curb Offset	45-1.03	N/A
	Shoulder Width	45-1.03	N/A
	Surface Type	Ch. 601	N/A
	TWLTL Width	46-5.02	N/A
	Parking-Lane Width	45-1.04	N/A
	Sidewalk Width	45-1.06	5 ft - 6 ft
	Bicycle-Lane Width	51-7.0	N/A
	Obstruction Free Zone	55-5.02	N/A
	Typical Curbing Type, where used	45-1.05(02)	N/A
	Side Slopes (Uncurbed)		
	Cut Foreslope	55-4.05(09)	N/A
	Cut Ditch Width	55-4.05(09)	N/A
	Cut Backslope	55-4.05(09)	N/A
	Fill	55-4.05(09)	N/A
	Side Slopes (Curbed)		
	Cut Backslope	55-4.05(09)	N/A
	Fill	55-4.05(09)	N/A
BRIDGES	**New or Reconstructed Bridges**		
	***Structural Capacity**	Ch. 403	N/A
	***Clear-Roadway Width**	55-6.03	N/A
	Existing Bridges to Remain in Place		
	***Structural Capacity**	Ch. 403	N/A
	***Clear-Roadway Width**	55-6.02	N/A
	***Vertical Clearance (Freeway Under)**		
	New or Replaced Overpassing Bridge	44-4.0	N/A
	Existing Overpassing Bridge	44-4.0	N/A
	Vertical Clearance, Local over Railroad	402-6.01(03)	N/A
ALIGNMENT ELEMENTS	***Stopping Sight Distance**	55-4.02	N/A
	Decision Sight Distance		
	Avoidance maneuver	42-2.0	N/A
	Stop Maneuver	42-2.0	N/A
	Intersection Sight Distance	55-4.06	N/A
	***Minimum Radius**	55-4.03(01)	N/A
	***Superelevation Rate**	55-4.03(02)	N/A
	***Horizontal Sight Distance**	55-4.03(07)	N/A
	***Vertical Curvature, K-value**		
	Crest	55-4.04(03)	N/A
	Sag	55-4.04(04)	N/A
	Vertical Grades		
	***Maximum**	55-4.04(01)	N/A
	Minimum	44-1.03	N/A

* Indicates Level One controlling design criteria. A deviation from such is a design exception, and is subject to approval. See section 40-8.0

Attachment 9-1
UNIQUE SPECIAL PROVISION
SUBGRADE TREATMENT, TYPE ID

The Standard Specifications are revised as follows:

SECTION 207, BEGIN LINE 9, INSERT AS FOLLOWS:

207.02 Materials

Materials shall be in accordance with the following:

Chemical Modifiers	215.02
Coarse Aggregate, Class D or Higher, Size No. 5, 8, 43, 53, or 73	904
Geogrid, Type IB	918.05
Geocell Confining System	214
Geotextile for Pavement and Subgrade	*918.02(c)*
Water	913.01

Air-cooled blast furnace slag shall not be used for subgrade treatment Types ID, IV, and IV.

SECTION 207, BEGIN LINE 31, INSERT AS FOLLOWS:

207.03 Construction Requirements

(a) Subgrade Construction Methods

The subgrade shall be constructed uniformly transversely across the width of the pavement including shoulders or curbs unless shown otherwise on the plans, by one of the following methods:

(a) chemical modification in accordance with 215;

(b) aggregate No. 53 in accordance with 301;

(c) geogrid in accordance with 214 placed under aggregate No. 53 in accordance with 301, or

(d) soil compaction to 100% of maximum dry density~~.~~*;*

(e) *geotextile in accordance with 214 placed under aggregate No. 5, 8, and 53 in accordance with 301*.

Longitudinally, the treatment may vary depending on the method of construction.

SECTION 207, BEGIN LINE 71, INSERT AS FOLLOWS:

207.04 Subgrade Treatment Types

The subgrade treatment type shall be as specified on the contract plans. If required, the subgrade foundation shall be corrected as directed by the Engineer prior to subgrade treatment.

Type	Subgrade Description
I	24 in. of soil compacted in accordance with 203.23
IA	[blank]
IB	14 in. chemical soil modification
IC	12 in. coarse aggregate No. 53 in accordance with 301
ID	*12 in. of coarse aggregate with a geotextile in accordance with 918.02(c)*
II	6 in. coarse aggregate No. 53 in accordance with 301
IIA	8 in. chemical soil modification
III	In-place compaction in accordance with 203.23
IV	12 in. coarse aggregate No. 53 with Type IB geogrid in accordance with 214
IVA	12 in. coarse aggregate with Geocell confining system in accordance with 214
V	3 in. of subgrade excavated and replaced with 3 in. coarse aggregate No. 53

Type ID subgrade treatment shall be constructed with 9 in. of coarse aggregate No. 53 over 3 in. of coarse aggregate No. 5 or No. 8. Geotextile, Type 2B in accordance with 918.02(c) shall be placed above and below the layer of No. 5 or No. 8 coarse aggregate.

In areas where shallow utilities are encountered or chemical modification is not allowed, the Contractor may submit a request to the Engineer to substitute Type IC for Type IB.

SECTION 207, BEGIN LINE 107, INSERT AS FOLLOWS:

207.05 Method of Measurement

Subgrade treatment will be measured in both cut and fill areas by the square yard per type. Chemicals for modification, excavation, aggregates, *geotextile,* and geogrid materials will not be measured.

The undercutting of rock, where encountered, will be measured in accordance with 203.27(b).

SECTION 207, BEGIN LINE 124, INSERT AS FOLLOWS:

Payment will be made under:

Pay Item Pay **Unit Symbol**

Subgrade Treatment, Type _____ .....SYS

The cost of subgrade treatments including testing, sampling, aggregates, chemicals for modification, geogrid, geotextile and geocell confining system, coarse aggregate for subgrade Type IC, *Type ID*, Type II, Type IV, Type IVA, Type V, water, and the excavation required, shall be included in the cost of the pay item.

TYPE XI REFLECTIVE SHEETING

The Standard Specifications are revised as follows:

SECTION 919.01, BEGIN LINE 78, INSERT AS FOLLOWS:

(b) Sheeting Material

Only sheeting materials from the Department's list of approved Sign Sheeting Materials shall be used *for Type IV through Type X sheeting.* Type IV or higher sheeting shall be used *for all ground mounted* highway signs. *Type XI sheeting shall be used for all overhead highway signs. Type XI highway sheeting shall be from the Department's list of approved Sign Sheeting Materials or from a manufacturer that has complete test results from the National Transportation Product Evaluation Program, NTPEP. A type C certification in accordance with 916 shall be furnished for Type XI sheeting.* The sheeting type for the sign copy and border shall be the same type or higher than the sheeting type used for the background. Sheeting materials will be placed and maintained on the Department's approved list in accordance with ITM 930.

CONTRAST LANE LINES

The Standard Specifications are revised as follows:

SECTION 808.04, BEGIN LINE 52, DELETE AND INSERT AS FOLLOWS:

808.04 Longitudinal Markings and Milled Corrugations

All longitudinal lines shall be clearly and sharply delineated, straight and true on tangent, and form a smooth curve where required. Lines shall be square at both ends, without mist, drip or spatter.

A solid line shall be continuous. A broken line shall consist of 10 ft line segments with 30 ft gaps *on HMA pavement. On PCCP, a broken line shall consist of 20 ft line segments with the first 10 ft white in color and the last 10 ft black in color and 20 ft gaps between segments.* A dotted line shall consist of 3 ft line segments with 9 ft gaps unless otherwise indicated on the plans *on HMA pavement. On PCCP, a dotted line shall consist of 6 ft line segments with the first 3 ft white in color and the last 3 ft black in color and 6 ft gaps between segments.*

SECTION 808.04, BEGIN LINE 97, DELETE AND INSERT AS FOLLOWS:

(b) Lane Lines

Lane lines shall be used to separate lanes of traffic moving in the same direction. Normal width lane line markings *on HMA pavement* shall be white in color and shall be 5 in. wide on interstates and freeways, and 4 in. wide on all other roads. *Normal width lane line markings on PCCP shall be of preformed plastic material, white and black in color, and shall be 5 in. wide on interstates and freeways, and 4 in wide on all other roads.* Lane lines shall be offset 4 in. to the right of longitudinal pavement joints or divisions between traffic lanes. Wide lane lines for lane drops, route splits, or auxiliary lanes *on HMA pavement* shall be white in color and shall be 8 in. wide. *Wide lane lines for lane drops, route splits, or auxiliary lanes on PCCP shall be white and black in color and shall be 8 in. wide.* White solid lines shall be used to mark lane lines only when specified or directed.

(c) Edge Lines

Edge lines shall be used to outline and separate the edge of pavement from the shoulder. Edge line markings shall be 6 in. in width with an additional 1.5 in. to 2 in. of black contrast markings on each side for a total width of 9 in. to 10 in. The edge lines shall be placed such that the edge of the marking nearest the edge of the pavement shall be offset 4 in. from the edge of the pavement except as otherwise directed. Right edge lines shall be marked with a white solid line and left edge lines shall be marked with a yellow solid line.

PAVEMENT MESSAGE MARKINGS

[This is a proprietary special provision and requires a public interest finding]

The Standard Specifications are revised as follows:

SECTION 808.05, BEGIN LINE 147, INSERT AS FOLLOWS:

(b) Pavement Message Markings

Pavement message markings shall be used as specified or directed for railroad crossing approaches, intersection approaches, crosswalk approaches, ADA accessible parking space symbols, *interstate route shields*, and other messages applied to the pavement with pavement marking material. The markings shall consist of all necessary lines, words, and symbols as specified or directed, and shall be in accordance with the MUTCD.

Interstate route shields shall be 6 ft wide and have a length of 15 ft. Interstate route shields shall be thermoplastic and shall be chosen from the following manufacturers:

(a) Ennis-Flint, Inc.

(b) Approved Equal

Interstate route shields shall be supplemented with cardinal direction pavement message markings. The cardinal direction pavement message markings to be used with the interstate route shields shall be made of thermoplastic and have white letters on a blue background. The cardinal direction pavement message marking for "NORTH" or "SOUTH" shall be 9 ft wide and have a length of 10 ft. The cardinal direction pavement message marking for "EAST" or "WEST" shall be 8 ft. wide and have a length of 10 ft. The cardinal direction pavement message markings shall be chosen from the following manufacturers:

(a) Ennis-Flint, Inc.

(b) Approved Equal

A type C certification in accordance with 916 shall be furnished for the interstate route shields and cardinal direction pavement message markings.

SECTION 808.12, BEGIN LINE 621, INSERT AS FOLLOWS:

Grooving for pavement markings will be measured as the total distance of grooving for each pavement marking line in linear feet. Pavement message markings *except interstate route shields and cardinal direction pavement message markings* will be measured by the total number

of each type placed. *Interstate route shields and cardinal direction pavement message markings will not be measured for payment.*

SECTION 808.13, BEGIN LINE 644, INSERT AS FOLLOWS:

specified. Pavement message markings placed *except interstate route shields and cardinal direction pavement message markings* will be paid for at the contract unit price for each, for the material and message specified. *Interstate route shields and cardinal direction pavement message markings will be paid for at a contract lump sum price*.

PREFORMED PLASTIC MARKINGS

The Standard Specifications are revised as follows:

SECTION 808.07, BEGIN LINE 284, DELETE AND INSERT AS FOLLOWS:

(b) Durable Pavement Marking Material

Durable pavement marking material consists of thermoplastic, preformed plastic or multi-component markings. Durable pavement marking materials used for center lines, lane lines, or edge lines shall be installed within a groove in the pavement unless otherwise shown on the plans. Durable pavement marking materials used for barrier lines, pavement message, and transverse markings shall be surface applied unless otherwise indicated on the plans.

Durable pavement marking materials used for center lines, lane lines, or edge lines on this Contract shall be wet-reflective preformed plastic markings. Material application shall be in accordance with manufacturer recommendations. The cost of the wet-reflective elements in the preformed plastic shall be included in the cost of the markings. The wet reflective preformed plastic markings shall be chosen from the following manufacturers:

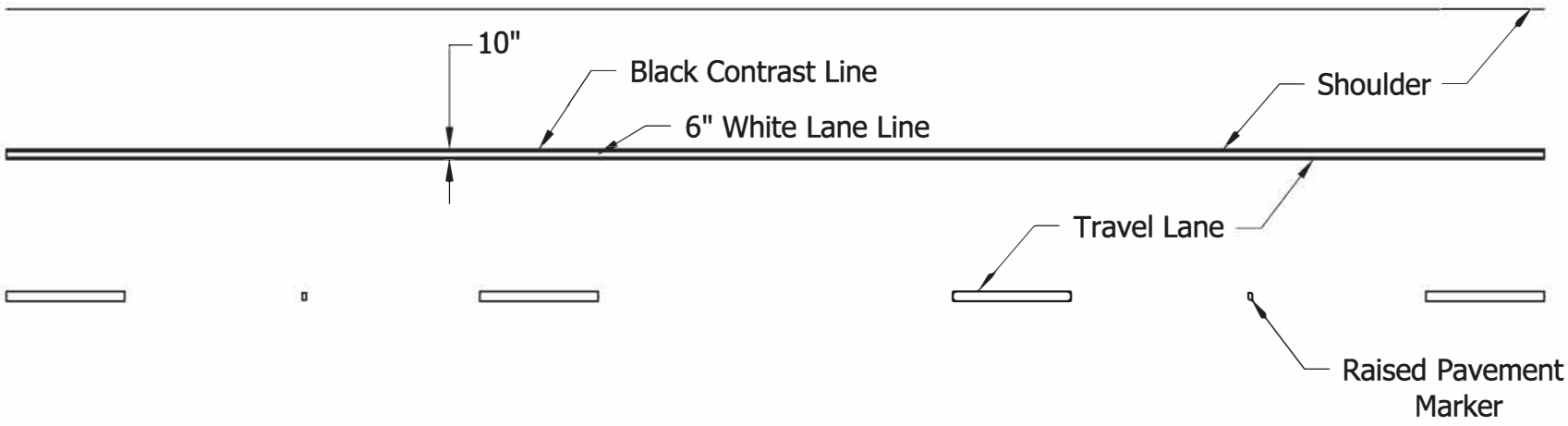
(a) Stamark High Performance Tape Series 380 AW by 3M Company, St. Paul MN

(b) Approved Equal

The wet retro-reflectivity of the preformed plastic markings may be measured by the Department in accordance with ASTM E 2177. The testing period will be not less than 14 days to not more than 30 days after the materials are applied. The initial wet retro-reflectivity of the preformed plastic markings shall be a minimum of 275 mcd/lux/m^2 for white markings and a minimum of 175 mcd/lux/m^2 for yellow markings when tested in accordance with ASTM E 2177.

A type C certification in accordance with 916 shall be furnished for the wet reflective preformed plastic markings.

Attachment 11-3
Contrast Edge Line Detail



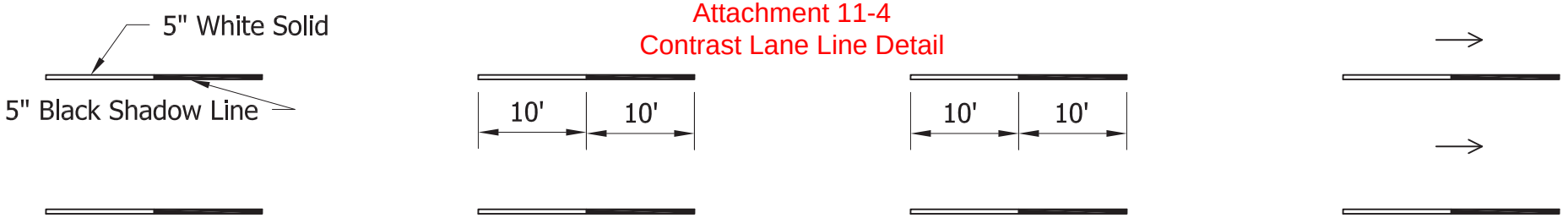
GENERAL NOTES

1. Contrast markings shall only be used on concrete pavements.
2. Contrast lane lines shall be in accordance with USP Traffic Control De vice and Project Standards.

CONTRAST LINE DIMENSIONS		
White	Black (per side)	Total Width
6"	2"	10"

CONTRAST ED GE LINE D ETAIL

Attachment 11-4
Contrast Lane Line Detail



CONTRAST LANE LINE DETAIL

DOTTED CONTRAST LANE LINE DETAIL

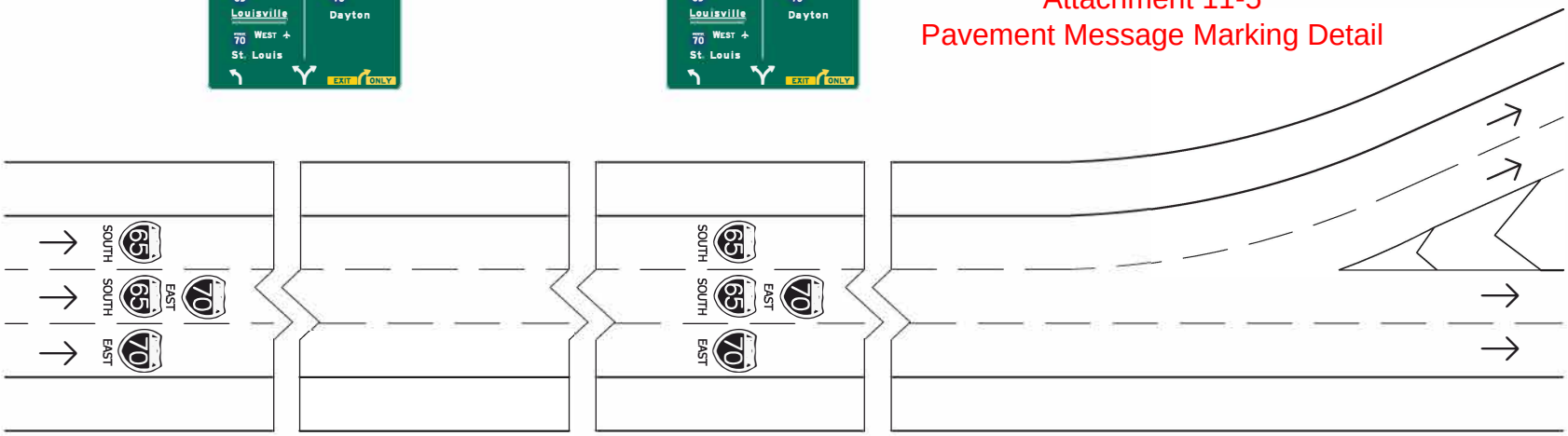
WIDE DOTTED CONTRAST LANE LINE DETAIL

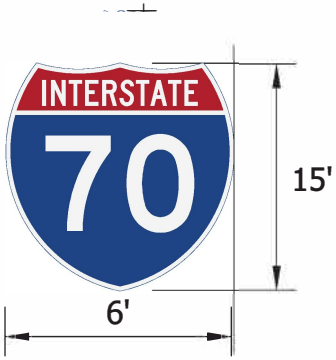
GENERAL NOTES

1. Concrete markings may only be used on concrete pavements.
2. Contrast lane lines shall be in accordance with USP Contrast Lane Lines and Project Standards.

CONTRAST LANE LINE DETAIL

Attachment 11-5
Pavement Message Marking Detail





Cardinal Direction Dimensions		
Direction	Width (W)	Length (L)
North, South	9 ft.	10 ft.
East, West	8 ft.	10 ft.

NOTES:

1. Specific Arrow Per Lane Signs and pavement message markings are shown for reference only.
2. Pavement message markings shall be in accordance with USP Traffic Control Device and Project Standards.

PAVEMENT MESSAGE MARKING DETAIL

November 6, 2019

SOLID STATE BALLASTED LUMINAIRES

Specification Reference: 807.13 & 920.01(d) SM Material Codes: 913M11190 to 913M11220

Source Code	Manufacturer Product Name	Approval Number	Comments

HIGH MAST- Mounting Heights ≥ 100 ft with Symmetric Light Distribution
SM Material Code 913M11220

CM0003 Holophane (Acuity Brands)----------W199700
HMLED3 PK3 40K MVOLT G AW AO P7 PSC

SBL1001 General Electric----------W199701
Evolve ERHM Gen 2- 02 0 80 VW 7 40 N D D 4B GRAY

SBL1002 Philips----------W199702
High Focus HFL 184L1050NW-G1 5W UNV DD TLRD7 PH9 GY3

HIGH MAST- Mounting Heights ≥ 100 ft with Asymmetric Light Distribution
SM Material Code 913M11220

CM0003 Holophane (Acuity Brands)----------W199703
HMLED3 PK4 40K MVOLT G M AO P7 PSC

SBL1001 General Electric----------W199704
Evolve ERHM Gen 2- 02 0 70 C3 7 40 D D 4B GRAY

SBL1002 Philips----------W199705
High Focus HFL 276L700NW-G1 3 UNV DD TLRD7 PH9 GY3

HIGH MAST- Mounting Heights 60 to 95 ft with Symmetric Light Distribution
SM Material Code 913M11220

CM0003 Holophane (Acuity Brands)----------W199700
HMLED3 PK3 40K MVOLT G AW AO P7 PSC

SBL1001 General Electric----------W199707
Evolve ERHM Gen 2- 02 0 60 VW 7 40 D D 4B GRAY

SBL1002 Philips----------W199702
High Focus HFL 184L1050NW-G1 5W UNV DD TLRD7 PH9 GY3

SOLID STATE BALLASTED LUMINAIRES

Specification Reference: 807.13 & 920.01(d) SM Material Codes: 913M11190 to 913M11220

Source Code	Manufacturer Product Name	Approval Number	Comments

HIGH MAST- Mounting Heights 60 to 95 ft with Asymmetric Light Distribution
SM Material Code 913M11220

CM0003 Holophane (Acuity Brands)----------W199703
HMLED3 PK4 40K MVOLT G M AO P7 PSC

SBL1001 General Electric----------W199710
Evolve ERHM Gen 2- 02 0 60 C3 7 40 D D 4B GRAY

SBL1002 Philips----------W199705
High Focus HFL 276L700NW-G1 3 UNV DD TLRD7 PH9 GY3

HIGH LUMEN – Standard (non-enhanced) Output with Type II Light Distribution
SM Material Code 913M11190

TS0016 American Electric Lighting (Acuity Brands)--------W199711
Autobahn ATBL E MVOLT R2 4B NL P7 SH

SBL1003 Eaton (Cooper), Navion----------W199712
NVN A 04 D U T2R 10K 4N7 AP

SBL1001 General Electric----------W199713
Evolve ERL2 0 23 B3 40 D GRAY A

TS9027 Leotek Electronics----------W199739
GCL1-80G-MV-NW-2R-GY-700-PCR7-4B-SC

SBL1002 Philips----------W199714
Road Focus RFL 215W96LED4K-T R2M UNIV DMG RCD7 PH9 GY3

SBL1004 PolyBrite----------W199715
Borealis SL4240W T3M 40K GR 05 7 pin NEMA Receptacle

HIGH LUMEN – Standard (non-enhanced) Output with Type III Light Distribution
SM Material Code 913M11190

TS0016 American Electric Lighting (Acuity Brands)---------W199716
Autobahn ATBL E MVOLT R3 4B NL P7 SH

SBL1003 Eaton (Cooper)----------W199717
Navion NVN AF 04 D U T3R 10K 4N7 AP

SOLID STATE BALLASTED LUMINAIRES

Specification Reference: 807.13 & 920.01(d) SM Material Codes: 913M11190 to 913M11220

Source Code	Manufacturer Product Name	Approval Number	Comments
SBL1001	General Electric Evolve ERL2- 0 23 C3 40 D GRAY A	W199718	
TS9027	Leotek Electronics GCL1-80G-MV-NW-3R-GY-700-PCR7-4B-SC	W199740	
SBL1002	Philips Road Focus RFL 215W96LED4K-T R3M UNIV DMG RCD7 PH9 GY3	W199719	
SBL1004	PolyBrite Borealis SL4240W T3M 40K GR 05 7 pin NEMA Receptacle	W199715	

***HIGH LUMEN – Enhanced Output with Type II Light Distribution**

SM Material Code 913M11190

TS0016	American Electric Lighting (Acuity Brands) Autobahn ATBL E MVOLT R2 4B NL P7 SH	W199711	
SBL1003	Eaton (Cooper) Navion NVN AF 06 D U T2R 10K 4N7 AP	W199721	
SBL1001	General Electric Evolve ERL2- 0 28 B3 40 D GRAY A	W199722	
SBL1002	Philips Road Focus RFL 241W112LED4K-T R2M UNIV DMG RCD7 PH9 GY3	W199723	

*Note: Refer to this list when enhanced output is indicated by the plans

***HIGH LUMEN – Enhanced Output with Type III Light Distribution**

SM Material Code 913M11190

TS0016	American Electric Lighting (Acuity Brands) Autobahn ATBL E MVOLT R3 4B NL P7 SH	W199716	
SBL1003	Eaton (Cooper) Navion; NVN AF 06 D U T3R 10K 4N7 AP	W199725	

SOLID STATE BALLASTED LUMINAIRES

Specification Reference: 807.13 & 920.01(d) SM Material Codes: 913M11190 to 913M11220

Source Code	Manufacturer Product Name	Approval Number	Comments
SBL1001	General Electric Evolve ERL2- 0 28 C3 40 D GRAY A	W199726	
SBL1002	Philips Road Focus RFL 241W112LED4K-T R3M UNIV DMG RCD7 PH9 GY3	W199727	

*Note: Refer to this list when enhanced output is indicated by the plans

LOW LUMEN with Type II Light Distribution

SM Material Code 913M11190

TS0016	American Electric Lighting (Acuity Brands) Autobahn ATBM P40 MVOLT R2 4B NL P7 SH	W199728	
SBL1003	Eaton (Cooper) Verdeon VERD G AO2 D U T2 4N7 10K 4B AP	W199729	
SBL1001	General Electric Evolve ERLH 0 14 B3 40 D GRAY A	W199730	
SBL1002	Philips Road Focus RFM 160W48LED4K-T R2M UNIV DMG RCD7 PH9 GY3	W199731	
SBL1004	PolyBrite Borealis SL4150- T3M 40K GR 05 7 pin NEMA Receptacle	W199732	

LOW LUMEN with Type III Light Distribution

SM Material Code 913M11190

TS0016	American Electric Lighting (Acuity Brands)) Autobahn ATBM P40 MVOLT R3 4B NL P7 SH	W199733	
SBL1003	Eaton (Cooper) Verdeon VERD G AO2 D U T3 4N7 10K 4B AP	W199734	
SBL1001	General Electric Evolve ERLH 0 14 C3 40 D GRAY A	W199735	
SBL1002	Philips Road Focus RFM 160W48LED4K-T R3M UNIV DMG RCD7 PH9 GY3	W199736	

SOLID STATE BALLASTED LUMINAIRES

Specification Reference: 807.13 & 920.01(d) SM Material Codes: 913M11190 to 913M11220

Source Code	Manufacturer Product Name	Approval Number	Comments
SBL1004	PolyBrite Borealis SL4150- T3M 40K GR 05 7 pin NEMA Receptacle	W199732	

LOW LUMEN-LOW MOUNTING HEIGHT with Type II Light Distribution

SM Material Code 913M11190

TS0016	American Electric Lighting (Acuity Brands) Autobahn ATBM P40 MVOLT R2 4B NL P7 SH	W199728	
SBL1003	Eaton (Cooper) Verdeon VERD G AO2 D U T2 4N7 10K 4B AP	W199729	
SBL1001	General Electric Evolve ERLH 0 14 B3 40 D GRAY A	W199730	
SBL1002	Philips Road Focus RFM 160W48LED4K-T R2M UNIV DMG RCD7 PH9 GY3	W199731	
SBL1004	PolyBrite Borealis SL4150- T3M 40K GR 05 7 pin NEMA Receptacle	W199732	

LOW LUMEN-LOW MOUNTING HEIGHT with Type III Light Distribution

SM Material Code 913M11190

TS0016	American Electric Lighting (Acuity Brands) Autobahn ATBM P40 MVOLT R3 4B NL P7 SH	W199733	
SBL1003	Eaton (Cooper) Verdeon VERD G AO2 D U T3 4N7 10K 4B AP	W199734	
SBL1001	General Electric Evolve ERLH 0 14 C3 40 D GRAY A	W199735	
SBL1002	Philips Road Focus RFM 160W48LED4K-T R3M UNIV DMG RCD7 PH9 GY3	W199736	
SBL1004	PolyBrite Borealis SL4150- T3M 40K GR 05 7 pin NEMA Receptacle	W199732	

SOLID STATE BALLASTED LUMINAIRES

Specification Reference: 807.13 & 920.01(d) SM Material Codes: 913M11190 to 913M11220

Source Code	Manufacturer Product Name	Approval Number	Comments

UNDERPASS

SM Material Code 913M11210

SBL1001 General Electric----------W199737
Evolve LED Wall Pack EWNB F D4 7 40 GRAY

SBL1002 Philips----------W199738
Gardco FX1 80 G2 W I RM N A 5 N DMG SP1

Attachment 11-7
USP Bridge Mounted Sign

BRIDGE MOUNTED SIGN STRUCTURE

1. Description

This work shall consist of furnishing and installing overhead bridge mounted sign structures with a sign area no greater than 700 sft at the locations as directed.

2. Materials

Materials shall be in accordance with the following:

Concrete.....702 or 901.08
Fasteners.....919.01(d)
Overhead Sign Structures.....910.19
Reinforcing Bars.....910.01
Traffic Signs.....919.01

(a) General

The Bridge Mounted sign structure shall be in accordance with the 2015 edition of the AASHTO *LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals* with interim revisions through 2018. Other general material requirements include:

1. The total sign area shall be less than or equal to 700 sft.

(b) Design Loads

The Bridge Mounted sign structures shall be capable of supporting the following loadings:

1. Dead Load of 169 lbs/cft for aluminum supports and 490 lbs/cft for steel supports. A dead load of 2 lbs/sft for the sheet signs on the overhead sign structure. A dead load of 2.48 lbs/sft for the panel signs with an additional dead load of 2 lbs/sft for the extruded aluminum panels on the overhead sign structure.

2. Wind Load.
   The Bridge Mounted sign structures shall be capable of supporting the following wind loads.

Wind Load Requirements	
Mean Recurrence Interval Risk Category	High
Wind Speed (1700 Year MRI Basic Wind Speed)	120 mph
Wind Speed (10 Year MRI Gust Wind Speed)	76 mph
Height and Exposure Factor, K_Z for height less than or equal to 33 ft	1
Gust Effect Factor, G	1.14
Design Service Life	50 years

3. Ice Load.
   The Bridge Mounted sign structures shall be capable of supporting an ice load of 3 lbs/sft applied to the full perimeter of all members and applied to one face of the signs. The overhead sign structures shall be capable of supporting the specific load combination in the table below adapted from Table 3.4-1 in the 2015 edition of the AASHTO *LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.*

Specific Load Combination Requirements				
Load Combination Limit State	Description	Dead Components (DC)	Wind (W)	Ice (IC)
Extreme II	Ice	Max 1.10/ Min 0.90	0.50*	1.0
*The wind load shall be based on the 120 mph basic wind speed.				

4. Fatigue Load.
   The Bridge Mounted sign structures shall be capable of supporting a fatigue load in accordance with Article 11.5 of the 2015 edition of the AASHTO *LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals* as applied to all components, mechanical fasteners, and welds of support structures with a Fatigue Importance Factor, I_F, of 1.0.

3. Construction Requirements

Bridge Mounted sign structure locations shall be staked and the Engineer will either approve the locations or give written notice of necessary changes. Two days notice shall be provided for inspection and approval of staked locations. Working drawings shall be submitted in accordance with 802.04.

The vertical clearance of the overhead sign structure shall be a minimum of 17.5 ft and a maximum of 19 ft.

4. Method of Measurement

Bridge Mounted sign structures will be measured by the number of units of each type installed.

Sheet signs and panel signs will be measured in accordance with 802.11.

5. Basis of Payment

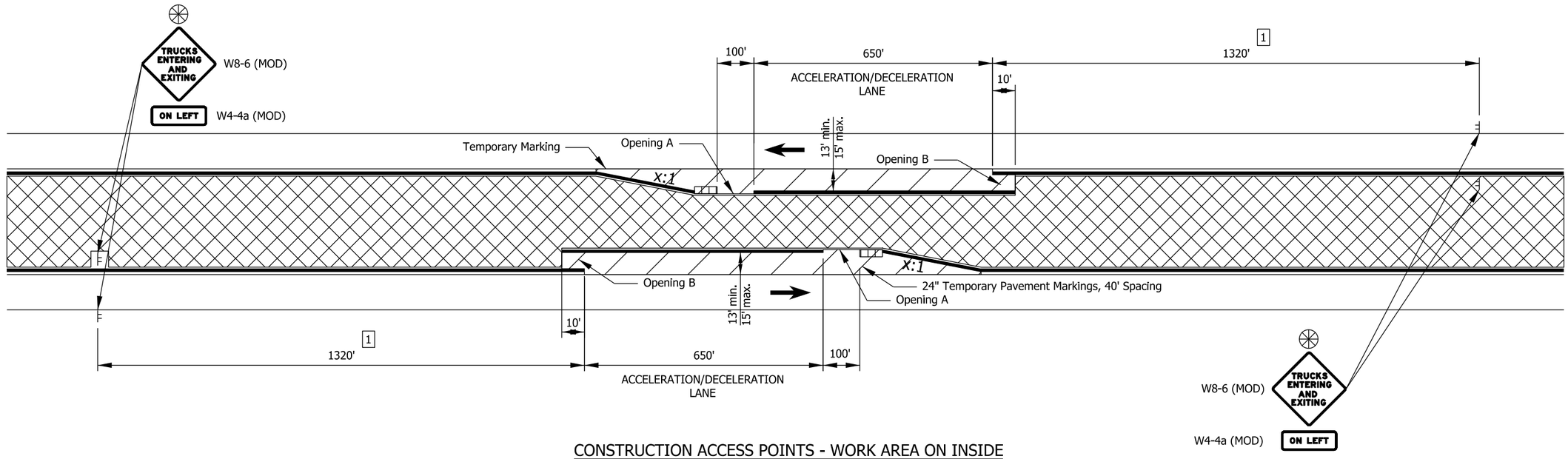
Bridge Mounted sign structures will be paid for at the contract unit price per each, complete in place.

Sheet signs and panel signs will be paid for in accordance with 802.12.

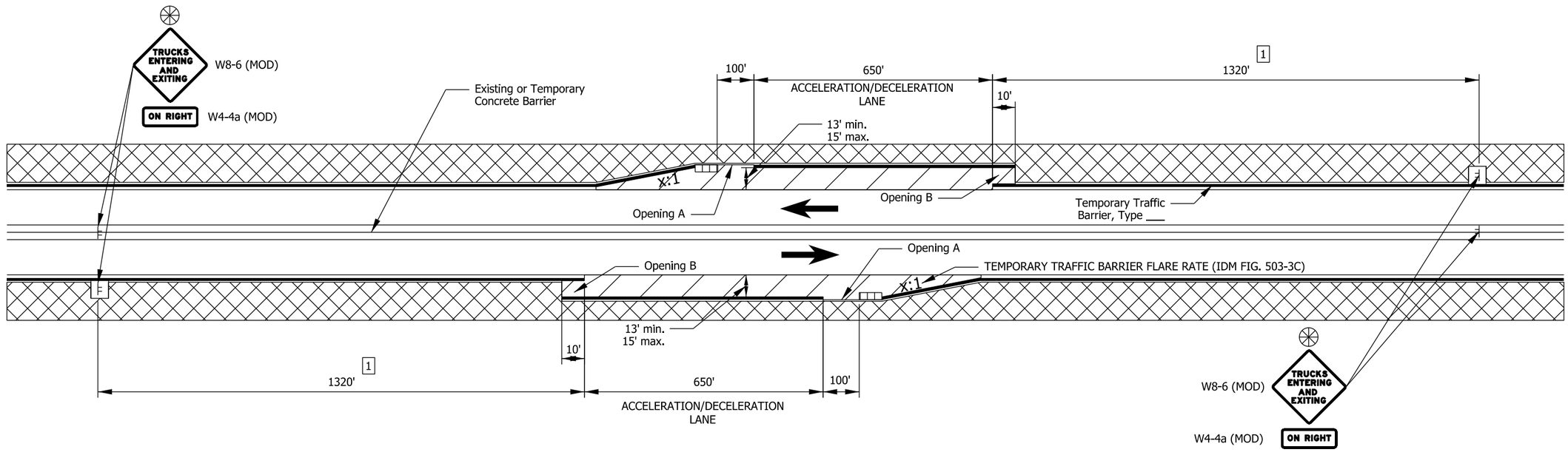
Payment will be made under:

Pay Item.....Pay Unit Symbol
Bridge Mounted Sign Structure.....EACH

The cost of staking Bridge Mounted sign structure locations, including materials and labor and any other necessary incidentals, shall be included in the cost of the Bridge Mounted sign structure pay item.



CONSTRUCTION ACCESS POINTS - WORK AREA ON INSIDE



CONSTRUCTION ACCESS POINTS - WORK AREA ON OUTSIDE

LEGEND

- ENERGY ABSORBING TERMINAL, CZ, TL-2 OR TL-3
- Construction Sign
- Construction Warning Light, Type B
- Construction Area
- Direction of Traffic (Number of Lanes Vary)

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: _____ DRAWN: _____

CHECKED: _____ CHECKED: _____

INDIANA
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION ACCESS POINTS DETAILS

HORIZONTAL SCALE	BRIDGE FILE
N/A	N/A
VERTICAL SCALE	DESIGNATION
N/A	1801695
SURVEY BOOK	SHEETS
	of
CONTRACT	PROJECT
R-41536	1801695

$FILE$
$DATE$

NOTES:

1. Sign spacing should be adjustied to avoid conflict with existing signs.

2. Construction Access Points shall be used in the following manner: Ingress shall be made by construction vehicles by changing lanes into the deceleration lane as early as possible, decelerating the construction vehicle using the deceleration lane, and then turning into Opening A to access the work area. Egress from the work area shall be made by construction vehicles by leaving the work area via Opening B, accelerating the construction vehicle within the acceleration lane (using as much length of the acceleration lane as possible), and then merging into the adjacent lane of traffic. Construction vehicles shall not swing out into adjacent lane of traffic when entering the work area. Repeated violations may result in closure of the access point.

3. Drums shall be placed across Construction Access Points during periods when no active work is occurring(evenings, days, weekends, extended shutdowns, etc). Drums shall be spaced every 20 feet across the opening.

4. All ingress and egress, adjacent to travel lanes, shall only occur at established construction access points including proper signing, acceleration and deceleration lane, and delineation.

5. Construction Access Point locations shall be selected for good sight distance and avoiding locations just beyond sharp horizontal curves and crest vertical curves, on overhead structures, on upgrades, within ½ mile in advance of an exit ramp or beyond an entrance ramp, etc. Minimum spacing for construction access points shall be 1.0 miles. In the event that the Engineer determines that an access point does not function in a safe manner, he/she shall order it immediately closed at no cost to the State. Access points may be relocated subject to the approval of the Engineer, as necessary to accomplish construction activities.

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: _____ DRAWN: _____

CHECKED: _____ CHECKED: _____

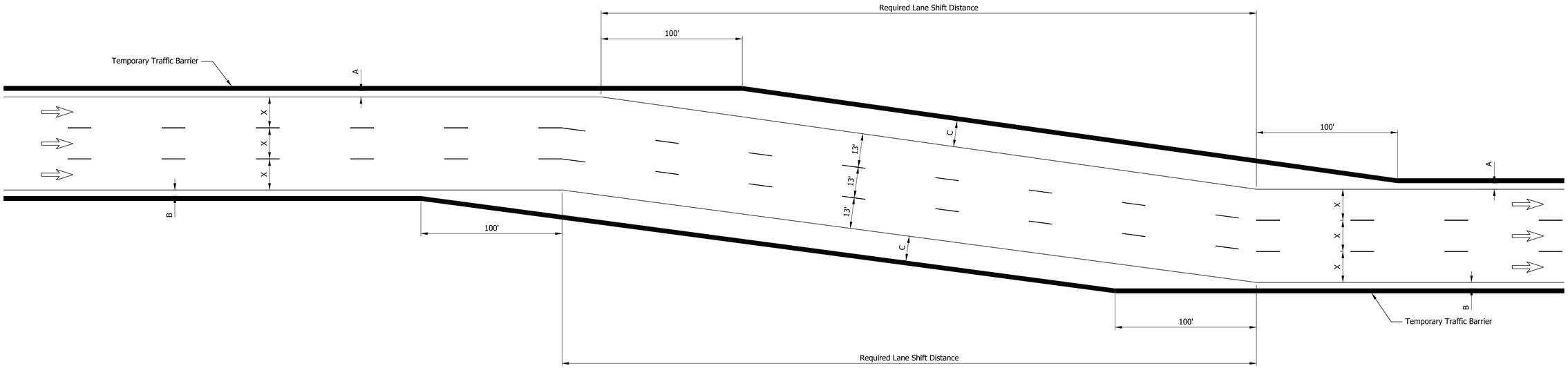
INDIANA
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION ACCESS POINTS

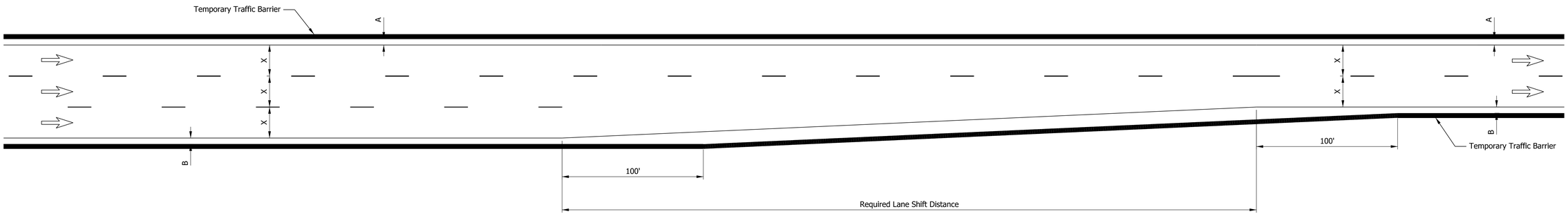
HORIZONTAL SCALE	BRIDGE FILE
N/A	N/A
VERTICAL SCALE	DESIGNATION
N/A	1801695
SURVEY BOOK	SHEETS
	of
CONTRACT	PROJECT
R-41536	1801695

$FILE$
$DATE$

Attachment 12-2 Construction Taper Detail



MULTI-LANE SHIFT TAPER



MERGING TAPER
(LEFT OR RIGHT LANE MERGE)

A - Inside Shoulder Width

B - Outside Shoulder Width

C - Lane Shift Shoulder Width (Varies)

X - MOT Lane Width

Direction of Traffic (# of Lanes Vary)

RECOMMENDED FOR APPROVAL

DESIGN ENGINEER DATE

DESIGNED: ALH DRAWN: ALH

CHECKED: TAH CHECKED: TAH

INDIANA
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION LANE SHIFT TAPER
OR MERGING TAPER DETAILS

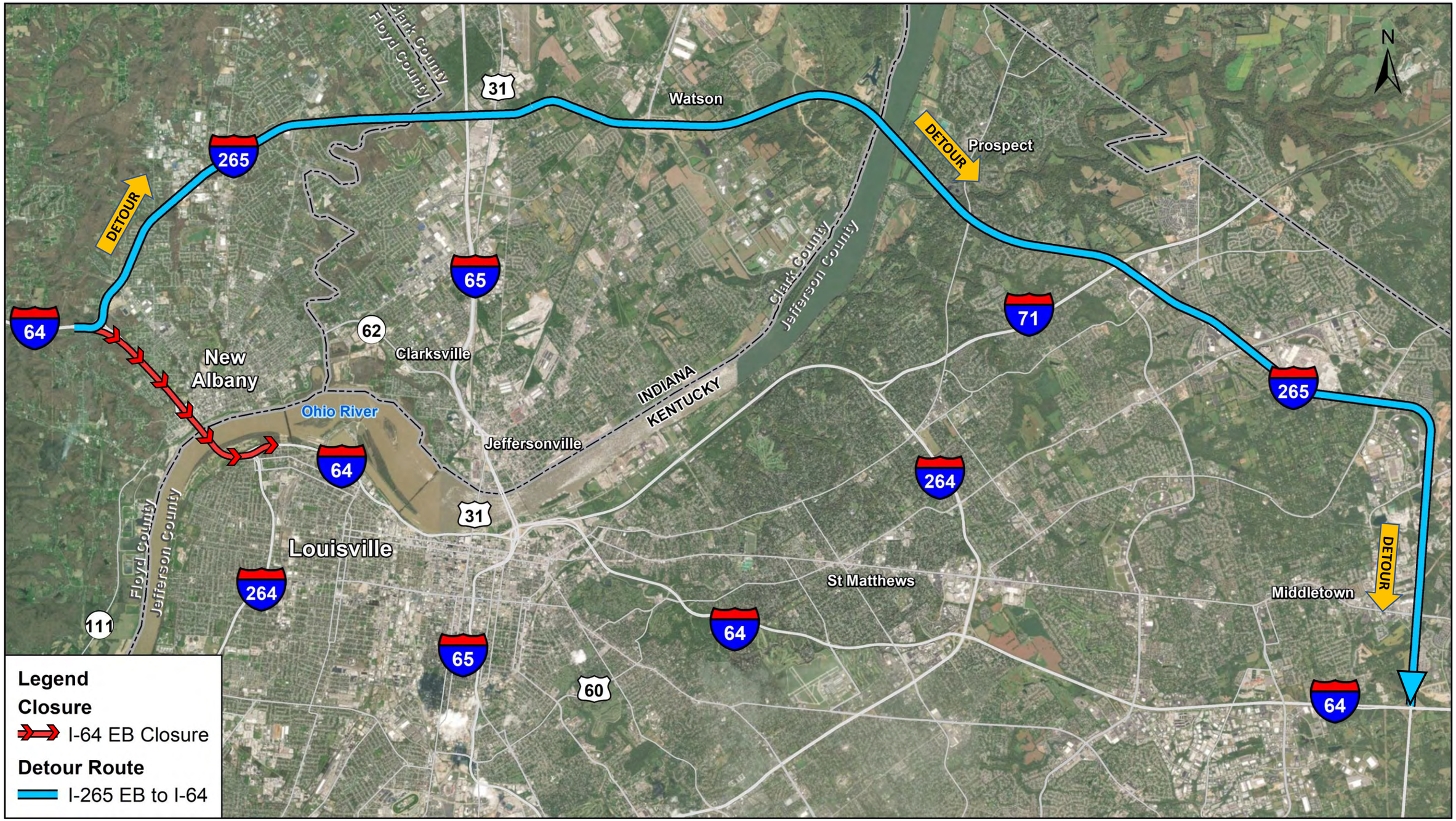
HORIZONTAL SCALE	BRIDGE FILE
N/A	N/A
VERTICAL SCALE	DESIGNATION
N/A	1801695

SURVEY BOOK	SHEETS
ELECTRONIC	$PAGE_NUM$ of $TOTAL_PAGES$
CONTRACT	PROJECT
R-41536	1801695

Construction Lane Shift-Standard.dgn
11/25/2019

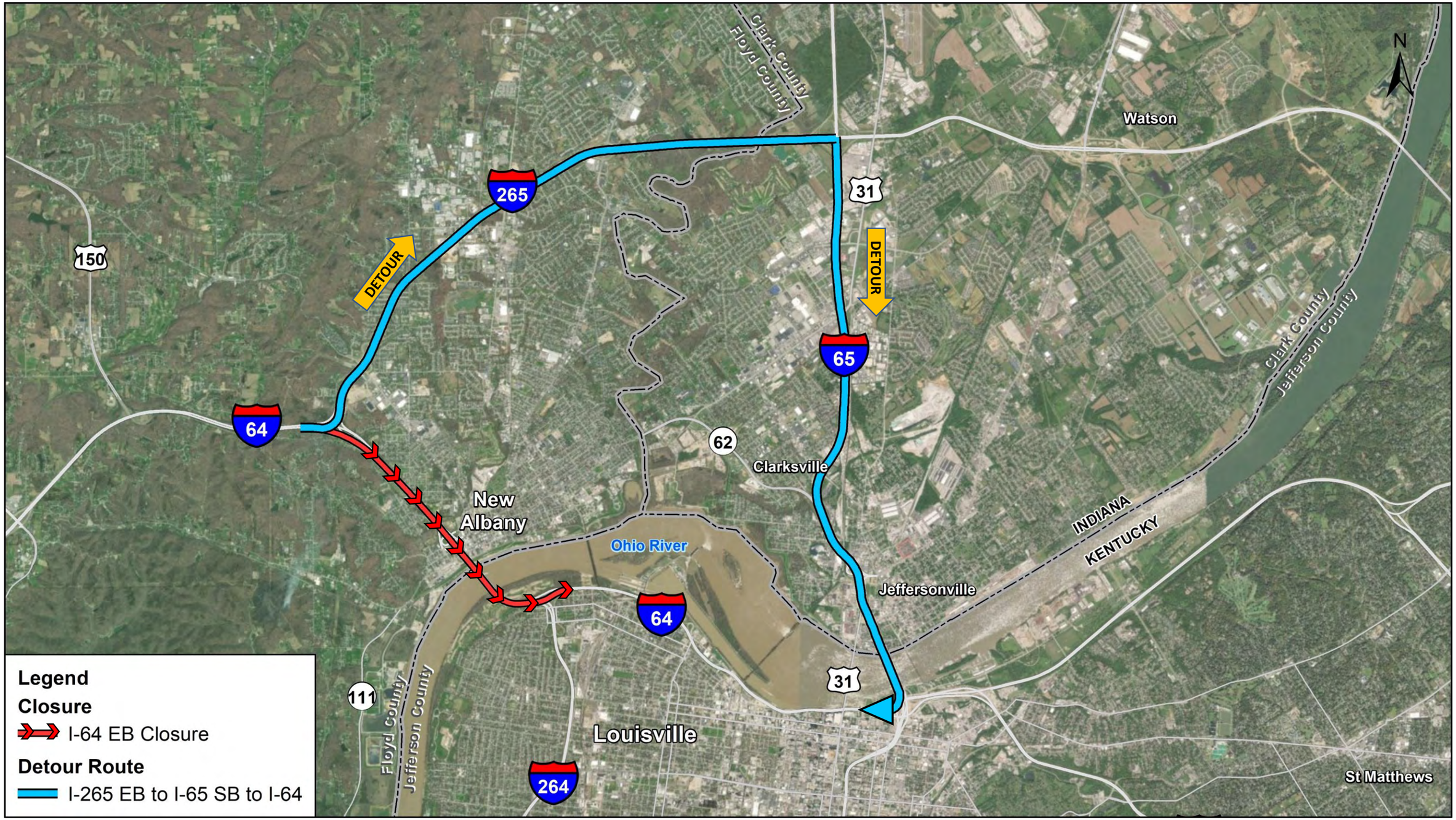
DETOUR ROUTE: I-64 EB Closure (Option 1)

SHERMAN MINTON RENEWAL



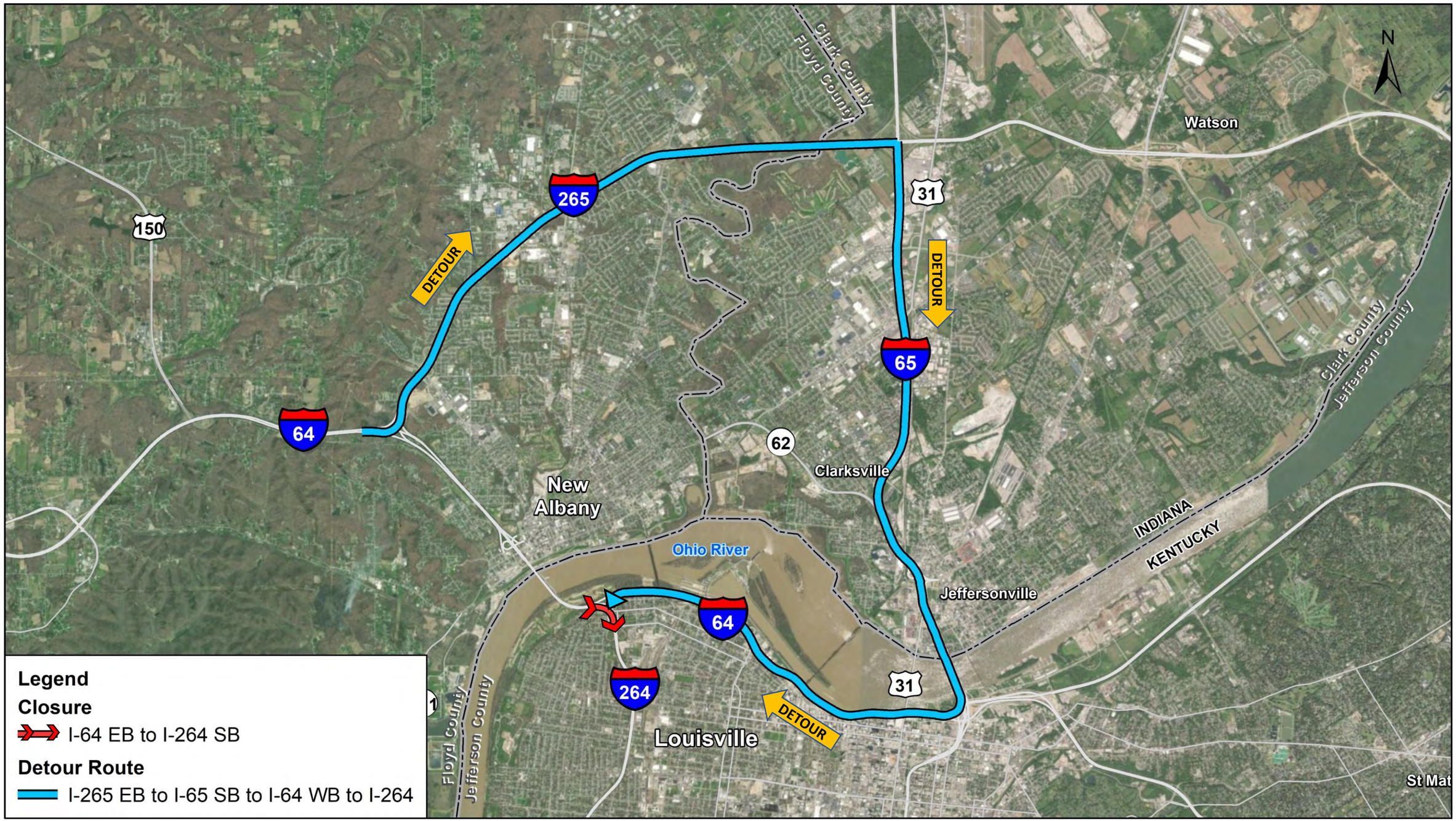
DETOUR ROUTE: **I-64 EB Closure (Option 2)**

SHERMAN MINTON RENEWAL



DETOUR ROUTE: **I-64 EB to I-264 SB Closure**

SHERMAN MINTON RENEWAL



INDIANA DEPARTMENT OF TRANSPORTATION

KENTUCKY TRANSPORTATION CABINET

DETOUR ROUTE: **I-64 WB Closure (Option 1)**

SHERMAN MINTON RENEWAL

DETOUR ROUTE: **I-64 WB Closure (Option 2)**

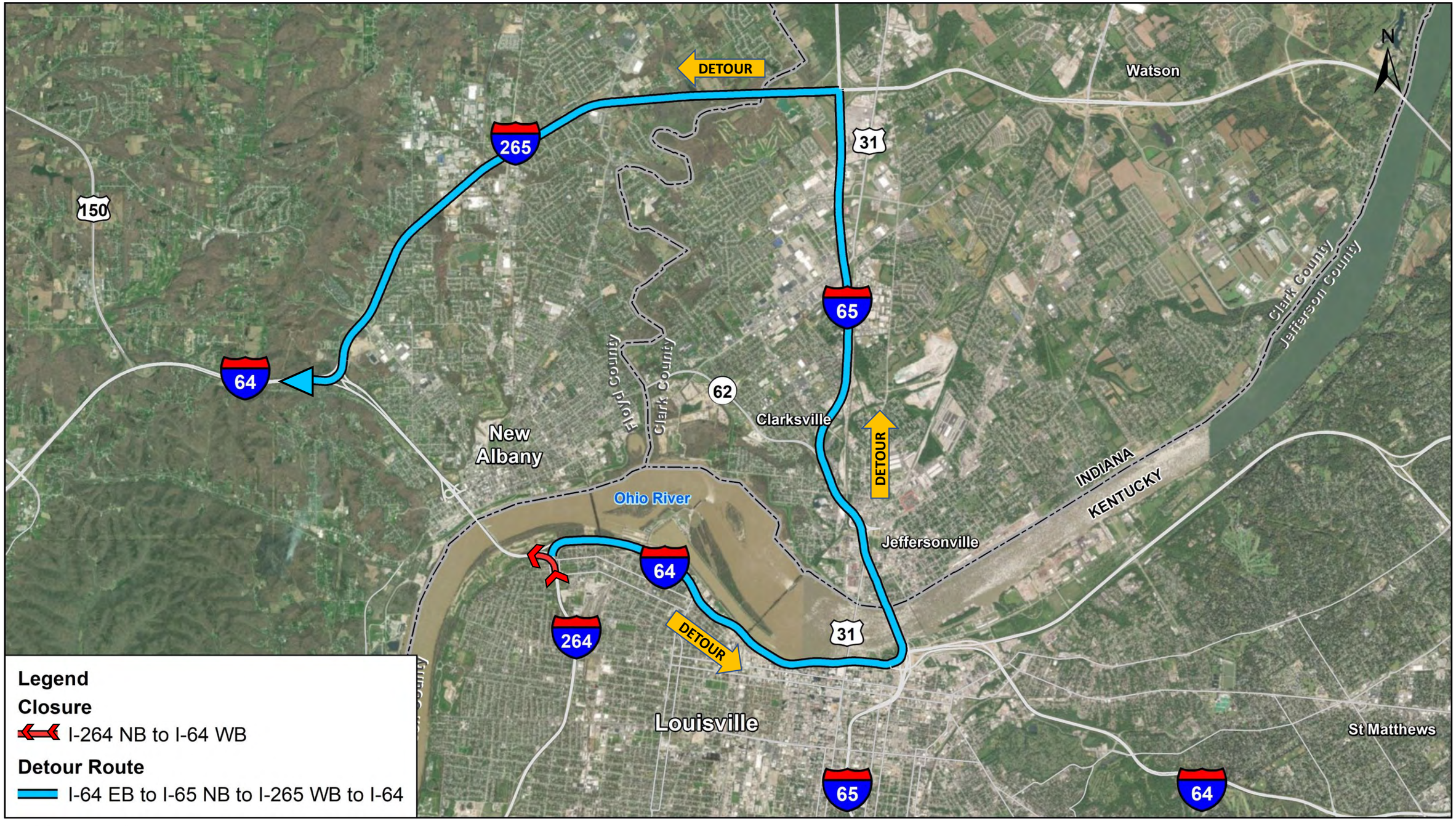
SHERMAN MINTON RENEWAL

INDIANA DEPARTMENT OF TRANSPORTATION INDOT

KENTUCKY TRANSPORTATION CABINET

DETOUR ROUTE: **I-264 NB to I-64 WB Closure**

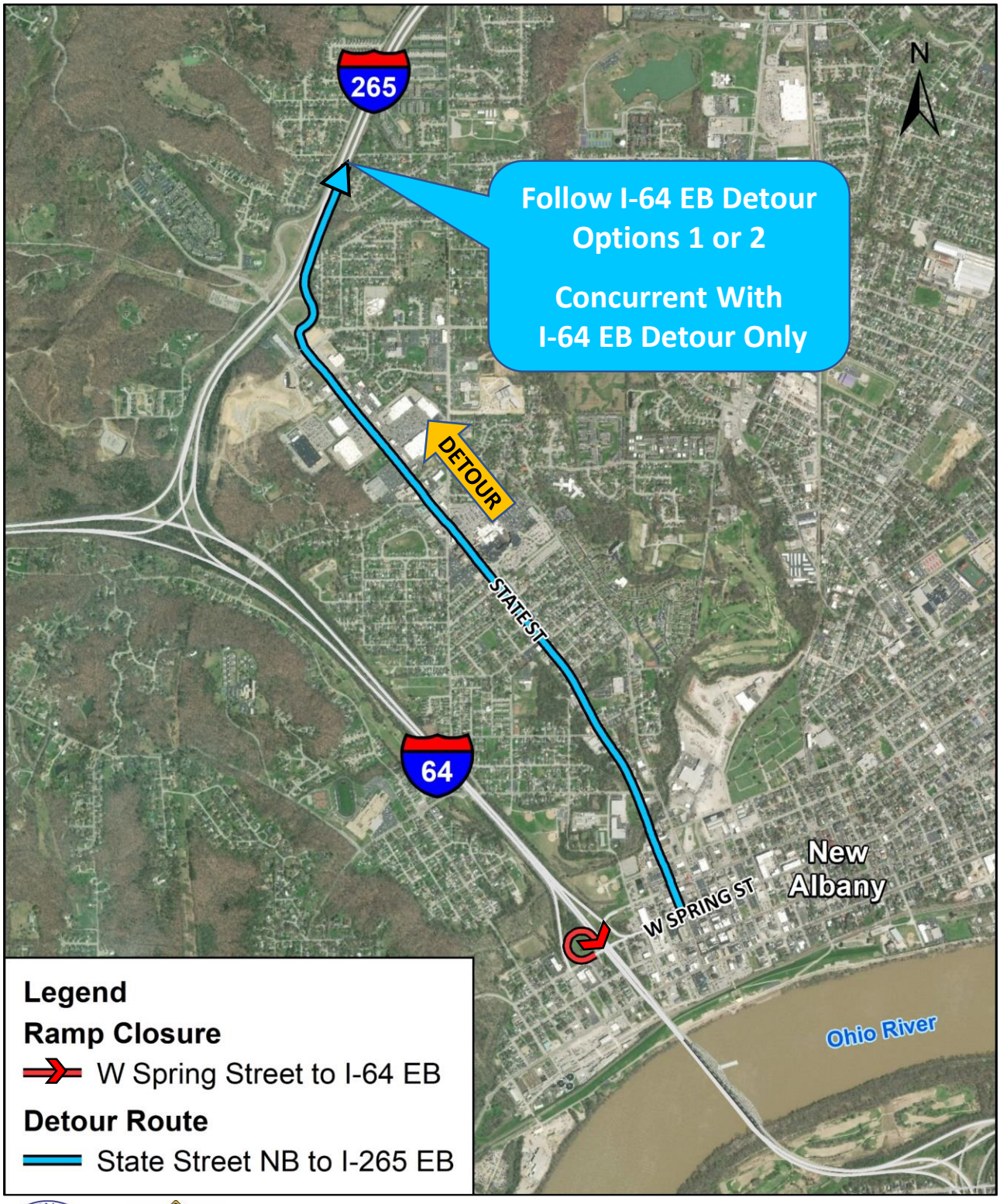
SHERMAN MINTON RENEWAL



ATTACHMENT 12-3 Approved Detour Routes

LOCAL DETOUR ROUTE: **W Spring St to I-64 EB Ramp Closure**

SHERMAN MINTON RENEWAL



INDIANA DEPARTMENT OF TRANSPORTATION INDOT

KENTUCKY TRANSPORTATION CABINET

LOCAL DETOUR ROUTE: **I-64 WB to W Elm St Ramp Closure**

SHERMAN MINTON RENEWAL

INDIANA DEPARTMENT OF TRANSPORTATION INDOT

KENTUCKY TRANSPORTATION CABINET

ATTACHMENT 12-4

UNIQUE SPECIAL PROVISIONS:

Maintenance of Traffic

DYNAMIC LATE MERGE SYSTEM

Description

This special provision describes furnishing, installing, operating, maintaining, monitoring, and removing a dynamic late merge system (DLMS) and/or delay time system as necessary during construction work. The DLMS and/or delay time system are types of Intelligent Work Zone Systems. The Design-Build Contractor shall use a Dynamic Late Merge System for any lane restriction placed in accordance with an approved Interstate Highway Congestion Policy exception.

Materials

Each DLMS shall consist of static traffic control signs with temporary flashing beacons, Portable Changeable Message Signs (PCMS), Traffic Detectors (TD), and an Automated System Manager (ASM) per direction of Traffic flow per restriction area.

System Operations

Each DLMS shall have an ASM with a module that allows for user input of triggering data thresholds based on speed and/or volume detected by the connected vehicle detectors.

The DLMS shall operate as a unit where the flashing beacons and the PCMSs activate at the same time for the same scenario.

The ASM shall ensure that the messages sent to the connected PCMSs and flashing beacons are synchronized so that all the messages on all the PCMSs are for the same traffic conditions.

Additionally, the ASM shall contain a feature that displays a communications status of all the detectors and PCMSs and displays a warning to the user if any PCMSs or detectors are failing to communicate.

Portable Changeable Message Signs (PCMS)

The Design-Build Contractor shall provide PCMSs in accordance with the Project standards. Each PCMS shall have the ability to communicate with the ASM.

Static Traffic Control Signs with Temporary Flashing Beacons

The Design-Build Contractor shall provide static traffic control signs with temporary flashing beacons in accordance with the Project Standards for Traffic Signals.

Traffic Detectors (TD)

The Design-Build Contractor shall provide TDs that are non-intrusive and capable of capturing traffic speed (mph) and traffic volume. The Design-Build Contractor shall coordinate with IFA as to quantity and location of TD(s), and as to which specific detector(s) shall collect speed and volume data, and for what duration. The location of the TD(s) may not correspond with the location of the PCMSs.

Automated System Manager (ASM)

The Design-Build Contractor shall provide an ASM that assesses current traffic data captured by the TDs, determine the appropriate merging strategy based upon pre-determined criteria, and communicate appropriate messages to

the traveling public through the PCMSs. The ASM shall provide real-time data from the ASM to a website. The Design-Build Contractor shall locate the ASM within the project limits.

The Design-Build Contractor shall provide access to the ASM website, including speed and volume data, and current PCMS message, to IFA, the INDOT Traffic Management Center (TMC), and the Traffic Response and Incident Management Assisting the River City (TRIMARC).

Data

The DLMS shall provide speed and volume data that are available to IFA, TMC, and TRIMARC at all times for the duration of work zone activity. Historical data shall be password protected and stored on the website for each day the system is in use, with date and time stamps included. The Design-Build Contractor shall provide an electronic copy of all data to IFA, TMC, and TRIMARC each week for the duration of work zone activity and until the DLMS has been removed.

System Acceptance

60 days prior to implementing the system, Design-Build Contractor shall submit for IFA review and approval verification that the system will adequately perform the functions specified in this special provision. Adequate verification includes past successful performance of the system on similar projects, successful deployments in neighboring states, literature and references from successful use of the system by other agencies, and/or demonstration of the system to IFA upon request.

The Design-Build Contractor shall provide the contact information for the Maintenance of Traffic Design-Build Coordinator and CWTS responsible for monitoring the performance of the system and for making modifications to the operational settings.

The Design-Build Contractor shall furnish all testing and calibration equipment.

Construction

General

The Design-Build Contractor shall provide a DLMS that accommodates a minimum of four distinct traffic conditions: free flow, congestion, loss of ASM communication, and manual override.

The Design-Build Contractor shall have the system in place and operational seven days in advance of the start of lane closures.

System Operation Strategy

The Design-Build Contractor shall coordinate system operation, detection, trends/thresholds, and messaging parameters with IFA.

Free Flow:

The free flow traffic conditions are to be determined by IFA and input by IFA, but typical traffic conditions that warrant this strategy may include:

Trend of vehicle speeds at one or more point above an adjustable parameter. This parameter shall be set for optimal results based on on-site monitoring. Typically, greater than 45 mph may be utilized as a guideline.

A trend of vehicle volume at one or more point below an adjustable parameter. This parameter shall be set for optimal results based on on-site monitoring and review. Typically, less than 1000 vehicles/hour/lane may be utilized as a guideline.

A trend including increased vehicle speeds together with reduced volume. These parameters shall be set for optimal results based on on-site monitoring and review.

During free flow conditions, display no lane use messages, and therefore allow traffic to resume typical early merge operation.

Congestion:

The congestion traffic conditions are to be determined by IFA, but typical traffic condition warrants may include:

A trend of vehicle speeds at one or more points below an adjustable parameter. This parameter shall be set for optimal results based on on-site monitoring and review. Typically, less than 45 mph may be utilized as a guideline.

A trend of vehicle volume at one or more point above an adjustable parameter. This parameter shall be set for optimal results based on on-site monitoring and review. Typically, greater than 1500 vehicles/hour/lane may be utilized as a guideline.

A trend including reduced vehicle speeds together with increased volume. These parameters shall be set for optimal results based on on-site monitoring and review.

When traffic conditions warrant a change to the late merge strategy, activate the temporary flashing beacons and display lane use messages on the PCMSs together. Example messages for congestion traffic conditions are below. Locate the PCMS in advance of the lane closure as shown in the Design-Build Contractor's approved MOT plans and based upon estimated queue lengths from the approved Interstate Highways Congestion Policy exception request and project geometry.

Quantity and approximate locations of PCMS for various stages shall be determined by the Design-Build Contractor.

The individual PCMS in the system shall initially display the following messages:

Point of merge:
MERGE HERE – TAKE TURNS

Intermediate PCMS:
DO NOT MERGE – USE ALL LANES

PCMS located beyond estimated maximum queue length:

I-69 NORTH – BACKUPS AHEAD; or
I-69 SOUTH – BACKUPS AHEAD

Loss of Communication:

If the DLMS has a loss of communication between the TD locations, display no message on the PCMS and display a warning message on the ASM interface.

Manual Override:

If the DLMS is needed to provide additional information due to other traffic concerns, the DBC shall manually override the PCMS display. The Design-Build Contractor shall document all override messages.

Upon notification to the designated Design-Build Contractor representative of a perceived deficiency in the operation of the system, or any individual part of the system, corrections to the system shall be made within 24-hours.

Calibration and Testing

After the DLMS has been installed, the Design-Build Contractor shall successfully perform a field test and calibration at the DLMS location to verify the system is detecting accurate vehicle speeds and volumes, accurately relaying the information to the ASM and then to the PCMSs. Verify that the traffic flow information (speeds and volumes) obtained from each TD is within +/- 5 percent of each of two 10- minute manual data periods.

The Design-Build Contractor shall provide for all system calibration, operation, maintenance, and timely on-call support services.